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PAGE 6

ATARI USERS MAGAZINE

£1.20

July/August 1987



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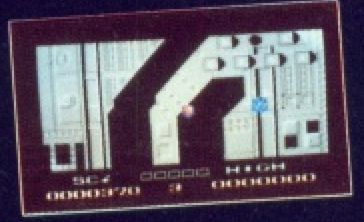
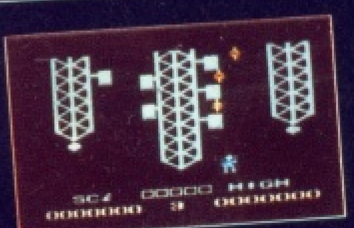
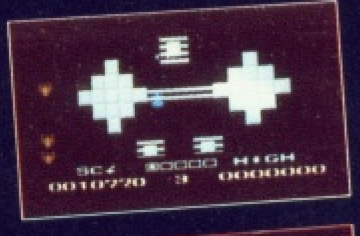
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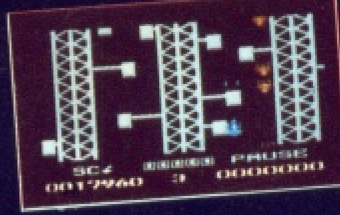
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Issue 28

July/August 1987

'The Magazine for the Dedicated Atari User'

REGULAR DEPARTMENTS

NEXT ISSUE ...

MJDBASE – an incredible database for your 8 bit
Make up your own illustrated stories with STORYBOOK
Will Garry Francis be back? Be seeing you.

Copy date is 22nd July. Publication date is 1st September

PAGE 6 is published bi-monthly on the 1st of each alternate month.

PAGE 6 is a users' magazine which relies entirely on readers' support in submitting articles and programs. The aim is to explore ATARI computing through the exchange of information and knowledge. We will pay for articles and programs where appropriate and we hope that readers will enjoy seeing their work published. In turn we hope that other readers will learn from the articles and programs submitted and increase their enjoyment of Atari computing.

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THE MAJOR EVENT!



So what is the 'major event' that I left you pondering last issue? Well, from the next issue, we hit the big time with full newsstand distribution throughout the UK and, eventually overseas. The summer will be spent frantically preparing for this launch and praying that it all works out! We have signed an agreement with the largest independent newsstand distributor and now all we need to do is make everyone, public and newsagents alike, aware that we exist. One of the problems is that PAGE 6 does not mean anything to those who don't know (there are going to be some sorely disappointed first time buyers who expect *two* sets of boobs!) so we have extra work in educating Atari owners who have not come across us before. If we were called Atari World, or something similar, it would be easier but we are not and, nearly five years on, we are not changing names now! If you fancy helping out, there is something you can do. Just get all your non-subscribing friends to walk into their local W.H.Smith and ask them if they are going to be stocking PAGE 6 from September. Tell them it is distributed by Seymour and maybe we will sell more than a few of our first 'newstand' issue.

If you are worried that PAGE 6 might deteriorate into another run of the mill magazine full of 'read it on the train and throw it away' articles, don't. We will introduce a few more 'casual' features but intend to continue with the long reviews, long listings, utilities and more serious articles which we believe dedicated Atari users want. If we fail to attract the casual user, so be it. At least they, and you, will continue to have the choice. One thing we must do is plan ahead more, hence the 'Wanted' ads elsewhere. Hopefully we will hear from you if you have anything to contribute. Don't be shy!

Finally, don't run away with the idea that big time distribution means that we will be sitting back in luxury for the rest of our lives! It doesn't quite work like that, believe me! In fact, if we don't get it right, the reverse is more likely to happen, and if we can't get the shops aware of the magazine, within a limited promotional budget, you might well be the lucky owners of the last few PAGE 6's! So, stroll into your newsagent and do your bit and PAGE 6 will be around as long as Atari!

A DEAL WITH ANTIC

We have recently reached an agreement with the American magazine ANTIC whereby we can re-print programs and articles from their previous issues and likewise they can re-print from PAGE 6. This, I believe, will be of benefit in many ways. Firstly, it will enable you to see some of the best programs and articles from the United States which you might otherwise never see and, secondly, it will give PAGE 6 greater exposure and credibility in the world at large. Additionally it will enable contributors to gain the pleasure of seeing their work published in one of the most respected Atari magazines in the world. What an ego trip!

Readers who already get ANTIC might not be so thrilled with this news, but let me assure you that PAGE 6 will not become a 'reprint service' for ANTIC nor, I am sure, will ANTIC copy PAGE 6 wholesale. We each will retain our individual style and PAGE 6 will be only reprint items which we feel will be of wide interest to our readers. The fact is that the majority of our readers *do not* read ANTIC and therefore will now have access to even more Atari material. The aim of PAGE 6 has always been to 'explore ATARI computing through the exchange of information and knowledge' and now readers will have access to a little more.

COMPUTER SUPPORT OR COMPUTER COWBOYS?

Several Readers seem to have lost money in recent months with Computer Support. So have we. The last time I spoke to John Lawson of Computer Support he spun me a yarn about not being able to keep up with orders, moving to new and better premises and getting the bank to help with expansion. Load of bull, it seems, as he happily carried on cashing people's cheques and not sending the goods. What's more he didn't pay for the ads in PAGE 6 with which he got that money. So what can you do, if you sent Computer Support money and did not get anything in return? Very little, it seems. The classic remedy is to take action through the Small Claims Court, but if you do not succeed you merely loose a little more. Rather than tell readers to take this action without knowing whether it would be successful, we have tried ourselves. We failed. We have tried to trace Mr. Lawson at three different addresses without success. We have even had someone go down to the latest address in Gravesend only to find empty offices and be told by the people downstairs that they had never heard of Computer Support. Unfortunately, if you can't trace the company, there is no point in taking action in the Small Claims Court, the fee is non-recoverable.

What you could do if you have lost money through Computer Support is write to me with full details. I can't promise that anything can be done but it may prove useful to know the full extent of readers' losses in case we can take any further action. In the meantime, if Mr Lawson is reading this, he might like to do the decent thing and refund people's money?

Someone else to watch out for is N.J. Gregory who advertised The Slave some issues ago. We did not lose out but have had several letters from readers who sent money off and have received nothing in return.

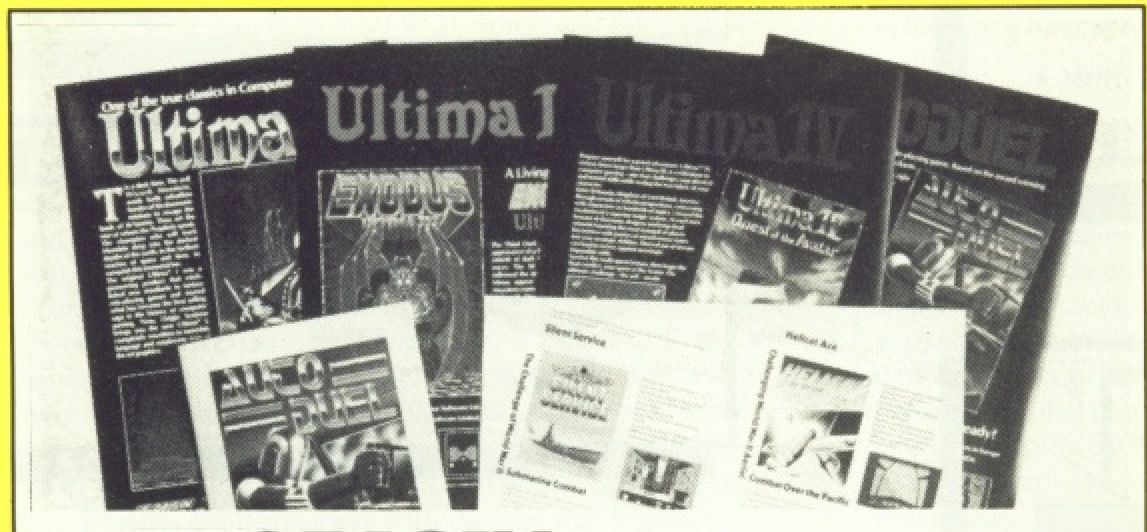
Why do these people have to let everybody down?

NEWS

THAT'S WHAT IT SAYS!

How can you tell that there are a lot of ex-Commodore people working for Atari? Easy, you just look at the new promotional literature for the 130XE. Commodore have been saying that about Atari for years. Makes you feel kind of weird doesn't it, holding in your hand a magazine that was entirely keyed in on a games machine? Maybe one day we'll have our own photo-setter but we'll have to wait until Atari buys out Linotron or Monotype. After all, what's the point in paying £20,000 for a machine that can't play Pacman?





AN ORIGIN-AL VENTURE

One of the few companies still doing the PR bit in grand style is Microprose who sent us a cracking press release folder to announce their joint venture in the UK with Origin Systems Inc. The press pack is full of superb posters, flyers, manuals, company info etc. all done in grand style to ensure that they get a good write up! I wish you could see it all!

Regular readers of PAGE 6 will know all about the quality of Origin products from the recent review of Ultima IV and this is one of several packages to be launched in the UK from July onwards. Others include AutoDuel, a futuristic car combat adventure based on the award winning Car Wars board game, and Ogre set on the battlegrounds of the 21st century with armoured footsoldiers fighting it out with tactical nuclear weapons! Not an arcade game this, but a one or two player game of strategy, again based on a successful board game. Another title planned by Origin for the Atari is Moebius, an original fantasy role playing game with martial arts, sword fighting and magic set in a fantasy island kingdom.

Origin products will be released on disk only at £19.95 for the 8 bit Atari and £24.95 for the ST. Most of the titles previously available for the Atari 8 bit will be made available on the ST.

MIRRORSOFT CONVERT TO 8 BIT

Mirrorsoft's recent deal with American company Mindscape (see ST News) is not limited just to the ST. 8 bit versions of Mindscape titles, where available, will now be distributed by Mirrorsoft and they are to undertake a certain amount of conversion work themselves to bring other titles to the 8 bit market.

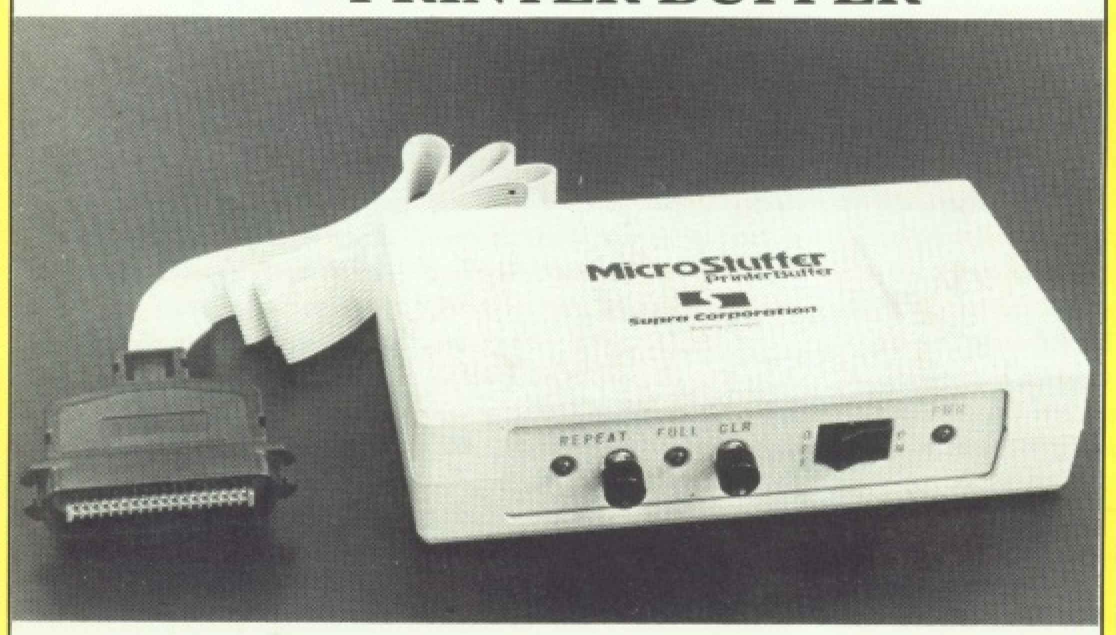
WELCOME TO THE LOST CONTINENT



It's pleasing to see another company supporting the Atari 8 bit market especially when they say 'there has been a great demand from retailers for ATARI software'!

ATLANTIS software recently released two budget titles for the Atari, each at £2.99. PANIK is 'an arcade classic' first released on the Commodore and DEATH RACE features day and night driving, speeds of up to 300 mph and 'great graphics'! ATLANTIS are entering a difficult market where criticism is often levelled at conversions from other machines, so they are anxious to support Atari with original titles. The wider the base of software producers for the Atari in the UK, the better so if you have any original games to offer, why not give Carole Jones of ATLANTIS a ring? You can get her on 01 771 8642.

AT LAST THE AFFORDABLE PRINTER BUFFER



Frontier Software of Harrogate who distribute the Supra Hard Disk Drives in the UK have also made available, perhaps the first really affordable printer buffer that will work with any computer already attached to a Centronics printer.

The MicroStuffer printer buffer retails at just £49.95 and has a full 64k of RAM to buffer any data sent to your printer thus freeing the computer for other work. Included is a self test and a rather unique 'Repeat' feature that allows the contents of the buffer to be reprinted as many times as required. Ideal for producing several copies of a document when you want to use the computer for something else.

The MicroStuffer will work on all Atari models and is available from your local dealer or direct from Frontier Software, P.O. Box 113, Harrogate, North Yorkshire, HG2 0BE.

SOFTWARE SHORTS

Recently released by Firebird on their Silver £1.99 range is Chimera, widely respected on most other micros, a sort of arcade space adventure in which you need to destroy the space ship Chimera before it destroys the Earth. Also at £1.99 is Microrhythm, a digitised drum kit which bears remarkable similarities to DigiDrum from 2 Bit Systems which is not surprising since it says on the label copyright 1987 2 Bit Systems!

Prism Leisure Corporation have acquired Addictive Games from Kevin Toms and their Football Manager is now available on the Atari for just £2.99. An ST version is promised later with enhanced graphics and gameplay for £14.95.

Announced by US Gold from SSI are the strategy games Colonial Conquest at £24.99 and Wargame Construction Set at £19.99. Both are on disk only. The former is a game of world domination for up to 6 players each controlling one of 6 countries whilst the Wargame Construction Set is just that, make up your own games and show how it should be done!

Also from US Gold are Broderbund's 'Electronic Novels' Mindwheel, Essex and Brimstone. Each title comes with its own hard bound novel which is essential reading to be able to complete the game. Mindwheel allows you to time travel into the minds of four deceased geniuses in a quest to retrieve the wheel of wisdom, whilst Essex takes place aboard the colossal starship Essex and is an adventure of intergalactic search and rescue in a bid to save the Universe. Brimstone is more fantasy where you relive the ancient adventures of the Albion Manuscripts in the underworld realm of Ulro. All on disk at £24.99 each.

Billed as the first Atari 3D chess game, Colossus 4 Chess was recently released by CDS Software and includes back-track facilities, a problem solving mode and handicapping amongst other features. Colossus 4 is a powerful program that, early in its career, beat 24 other programs in a series of 16 game matches. Can it beat you? £9.95 for a cassette version or £14.95 for disk will let you find out.

MISSING GAMES

Dear Page 6,

As a reply to recent letters that enquire why there are no Atari versions of certain games, I have some information that many Atari owners might like to know. Late last year I was asked by English Software to do a title page for COMMANDO (Elite Systems gave English Software the job of writing it). I completed the work and got paid for it but since I have heard nothing.

I have an idea what might have happened. Either of the companies pulled out of the contract and then sold the game to Mastertronic who released it under the name of Gun Law, with new scenery and game play but keeping to the basic idea.

Maybe this happens to other games?

D. Clapson, Bournemouth

BUSINESS GRAPHICS

Dear Page 6,

I have a suggestion for you for an article/program in Page 6. How about someone doing a business graphics program with options to display statistics as horizontal/vertical bar charts, line graphs and pie charts? It should have an ability to add text to the screen and, of course, be compatible with the 1029 printer! There may be a use for some statistical analysis too?

J.D. Collins, London

That should be reasonably easy to write. Who is going to write it then?

A TALE OF WOE

Dear Les,

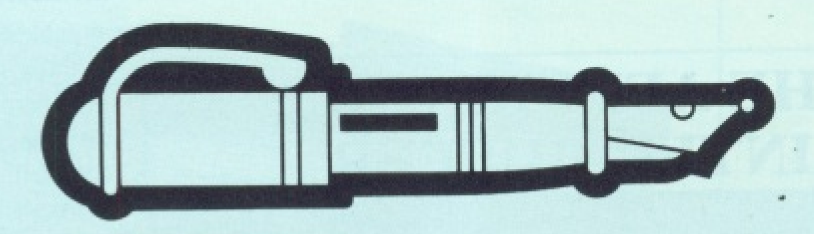
Having owned an 8 bit system for over 5 years, I decided to stay with Atari and buy an ST. I went along to the recent Atari Show armed with my Access card and after checking the prices on offer I bought a 1040ST and Philips 8833 monitor from a company called Gultronics.

My delight lasted less than 24 hours at which point the monitor decided to call it a day so I phoned the company and was told that I could have a replacement as long as I paid the carriage to return 11kg of monitor to them by courier! This I refused and after nearly a week it was agreed that a replacement would be sent. More phone calls and no monitor. I finally gave up and contacted Access who will make Gultronics collect the goods at their expense, which they had previously refused to do. I also contacted Atari who said that Gultronics, who seem to be at every Atari show, were not an Atari dealer so there was nothing they could do.

By the time you read this I hope to have a working system and hope that the company I purchase it from have a slightly better customer relations attitude. I would recommend that other readers use a credit card when purchasing goods as, at least, you get some backup if not satisfied.

N.J. Leonard, Bournemouth.

Would you like me to come to Gultronics' defence? If you were discounting so heavily that you made only a few pounds profit on each item, you couldn't afford to provide a good after sales service either. The lesson is that you get what you pay for and by shopping for the cheapest price you take risks. I am sure that the established Atari retailers who charge recommended prices and provide full after sales service will have little sympathy. Many struggle to stay in business because of sales lost to the discount merchants and often end up helping out users with problems on equipment bought elsewhere. There are one or two good mail order Atari dealers and many good Atari retailers. Support them. You may pay a little more but you can then expect, and will probably get, the after sales service that should be provided.



SOME SUGGESTIONS

Dear Page 6,

I would like to congratulate you on the quality of your magazine. The 8-bit section is particularly good but I have one criticism. Some adventures reviewed by Garry Francis do not have any real distribution in this country and, as a result, will be played only by a small handful of readers. This seems a waste of Garry's talents. I appreciate that Garry has to get many of his adventures from the US but nevertheless feel that he should pay attention to what is available over here.

The ST section is also good, although it seems to rely heavily on reviews. The ownership of the ST seems to be split between 'users' (the majority) and programmers. I am about to buy an ST and will join the latter category. Programmers seem to get short shrift from the magazines. If the magazine included more tutorial type articles of an advanced nature (not just copied from reference books) then the balance would be restored.

I hope your bear these comments in mind when preparing future issues.

Malcolm Bremer, Dagenham

Thanks for the input. Constructive criticism is always welcomed. I feel that one of the strengths of Garry Francis's column is the fact that he does cover some of the more obscure adventures, adventures which readers here might otherwise never know about. NO other U.K. magazine has covered the harder to find adventures and few, if any, cover any adventures in such depth. In many cases Garry gives you details of a supplier in the U.S.A. and there is no reason why you cannot order from them, it is just as easy and safe as buying from many U.K. mail order companies, particularly if you use a credit card.

I tend to agree with your comments about the ST section, it is heavily dependent on reviews but the problem is finding writers for the 'programming' side of the ST and finding subjects that will be of interest to more than a small minority. I hope that the series beginning this issue on using GEM with C begins to redress the balance. As always we are happy to consider any well written articles on programming for any Atari machine.

Got anything interesting to talk about? Or some questions to ask? Or some tips to pass on? Write to Readers Write, PAGE 6, P.O. Box 54, Stafford ST16 1DR

DATA STORAGE ON CASSETTE

Dear Page 6,

I have recently bought an Atari 800XL home computer. I am totally in the dark about computers, programming etc. I enjoy playing games but my friend says you can store information on cassettes from history notes to how my favourite football team did on Saturday. Is this possible? If so, how can I do it?

Trevor Carolan, Dublin

You can certainly use cassettes to store any kind of data, the only restriction is that you cannot access the data randomly as you can from disk. Unfortunately there are not many commercial programs around that support cassette storage for data and few 'user' programs. You will almost certainly need to learn a little programming and write a simple routine yourself. The book Your Atari Computer is one of the few with a whole chapter devoted to the program recorder and this gives full details on how to use the cassette for data storage and gives a sample mailing list program. An expensive book but, and I will keep saying it, one that every owner should invest in. Perhaps we could do a small tutorial in First Steps or elsewhere on using the cassette. Any interest?

DELIVERING THE GOODS?

Dear Les,

Well, it is the day after the pilgrimage to the Atari Show and I must say it was the best one yet.

I was very impressed with Atari's presence and with them 'delivering the goods' with the Mega ST's and laser printer and the two PC models. I enjoyed the Atari promo videos and as the American patter enthused about the reborn company I felt a strong sense of pride in being an Atari owner and part of something that is gaining strength and momentum around the world. I feel that the next few years will be as exciting and innovative as the late 70's and early 80's if you upgraded to 16k you were probably doubling your RAM as well as your overdraft! Atari are now proving that leading edge technology does not cost a fortune and 'power without the price' is a reality and not a promise.

Paul Hanson, Brighton

Ah, but did you actually see that laser working? I remember the PCW Show last year when the 2080ST and 4160ST were shown as well as the blitter and an 80 column card for the 8 bit machines. Some mutate, some get left behind. Never did see that CD ROM. Yes it will be exciting and innovative. Let's hope it will also be productive!

NO COMPETITIONS?

Dear Page 6,

I am disappointed with PAGE 6's lack of competitions. It seems the only competition I have ever seen was the £100 programming competition and the Readers Poll. Could you not possibly consider printing a few competitions each month, e.g. Graphics Contest, Programming Contest, DLI Programming etc.?

Graham Stewart, Dublin

P.S. If you do not print this letter I will definitely withdraw from buying PAGE 6.

I am disappointed in the lack of response when we do have a competition. Six entries for the programming contest you mentioned? It seems that there is no real interest in competitions that require some effort. And where was your entry, anyway?

COME ON ATARI

Dear Page 6,

At the recent Atari Show I picked up a leaflet on the Atari stand promoting what Atari describe as the 130XE *GAMES* Computer.

Come on Atari, what are you up to?

Don't get me wrong, I don't think playing games on a computer is any less of a valid use than any other. I enjoy playing games, as I am sure most users do, it is however certainly not the only way to use them. Some computers have the image of being educational tools, witness the BBC (nice BASIC, shame about the machine), overpriced and underpowered, but it sold because people could kid themselves that it would help their children's education.

I am sure that most of us users of the Atari 8 bit machines have had to endure comments along the lines of, 'Atari? They are only for games aren't they? I have a Commodore .. Spectrum .. Amstrad etc.'. We could disagree but somehow the myth endured. At least we could be smug in the knowledge that we knew that we had the best machine available, a fact that even Atari didn't seem to realise. Over the last few years, a great deal of first class 'serious' software has become available and I had begun to think that the Atari 8 bit line was being taken seriously at last.

Now along comes Atari promoting a GAMES computer. I don't think it will help them sell machines to describe them in this way. Are they downgrading the 8 bit line in favour of the ST range? If they are, I think they are wrong. The ST is a superb machine, but it is nowhere near as easy for the beginner to learn how to program as the 8 bit range is and, more importantly, not everybody can afford an ST. A around a hundred pounds, the 130XE has to be the best value home computer today, so, come on Atari, advertise the fact and tell people EVERYTHING it can do and about the enormous range of ALL types of software available. Maybe then you will sell as many machines as deserve to be sold.

Allan Knopp, Colchester

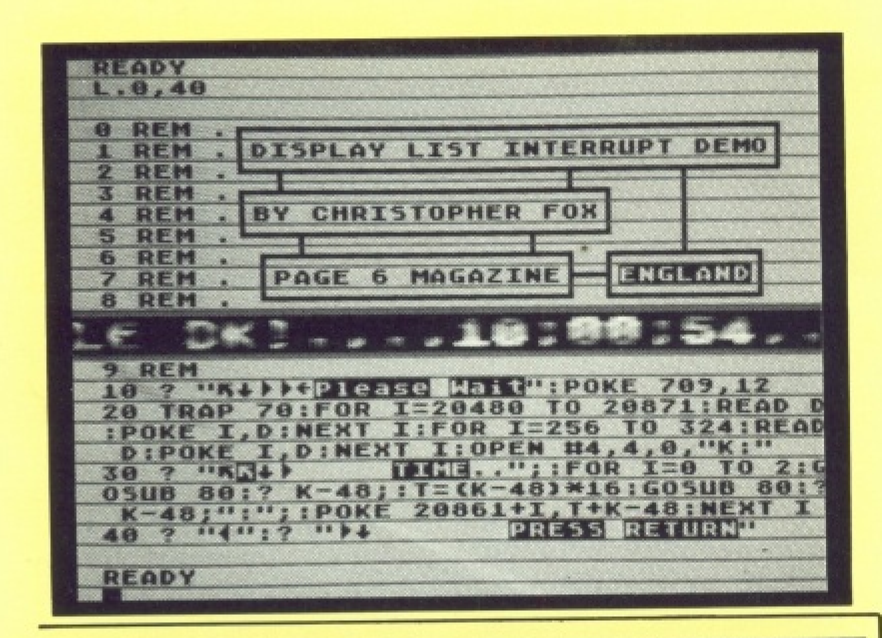
Quite right! With the myth of the 'games machine' Atari managed to get the smallest share of the UK market of any of the major manufacturers. Stories are legion of customers walking into various stores and saying 'I want something for education/ word processing/ business, what is the Atari like? It looks good value' only to be told by the salesman 'That's just a games machine, sir, take a look at this Commodore/ BBC/ Amstrad etc.'. Is that what Atari want? I can't believe it. Mind you, maybe it is so ingrained now that Atari themselves believe Atari means 'games'. A recent press release advising that the ST was to be sold in Smiths stated, and I quote, 'The high performance ICON driven games machine sells for £399'!!! Meanwhile, downstairs at the Atari Show, an American TV commercial is running showing a 130XE with products like Synfile+, Atariwriter and the like! What can you do? Throw up your hands in despair, and carry on doing Atari's PR for them I suppose.

PASSING TIME

by Chris Fox

If you enjoyed Chris Fox's TimeScreen from Issue 26, here's another one to try, this time with a more dynamic display. This one is ideal to use at club meetings or anywhere that you might like to leave a message for others to read. You can also type in programs with the demo running if you wish.

The program is similar to TimeScreen and requires you to input the time in 12 hour digital format when the program is first run. From there on just sit back and enjoy time passing! Quite literally!




```
EI 1 REM ******************************
GP 2 REM *       PASSING TIME         *
LR 3 REM *            by              *
JZ 4 REM *        CHRIS FOX           *
EC 5 REM * -------------------------- *
IZ 6 REM *  PAGE 6 MAGAZINE - ENGLAND *
EO 7 REM ******************************
NO 9 REM
DY 10 ? "K↓▶▶←Please Wait":POKE 709,12
PC 20 TRAP 70:FOR I=20480 TO 20871:READ D
   :POKE I,D:NEXT I:FOR I=256 TO 324:READ
    D:POKE I,D:NEXT I:OPEN #4,4,0,"K:"
LN 30 ? "KK↓▶       TIME..";:FOR I=0 TO 2:G
   OSUB 80:? K-48;:T=(K-48)*16:GOSUB 80:?
    K-48;":";:POKE 20861+I,T+K-48:NEXT I
YU 40 ? "◀":? "▶↓           PRESS RETURN"
TY 50 IF PEEK(764)<>12 THEN 50
UJ 60 POKE 2,0:POKE 3,80:CLOSE #4:X=USR(A
   DR("▨.. ▛. ♥Ph♦")):END
GI 70 ? "K▶▶KK↓↓'ERROR █'":END
JY 80 GET #4,K:IF K<48 OR K>57 THEN 80
ZZ 90 RETURN
DV 100 REM .  ┌────────────────────┐
SF 110 REM .  | MACHINE CODE $5000 |
HL 120 REM .  |SCROLLING LINE $0100|
FR 130 REM .  └────────────────────┘
QU 140 REM
FH 1000 DATA 216,120,160,175,162,80,140,0
   ,2,142,1,2,160,64,162,81,140,48,2,142,
   49,2,169,0,141,197,2,169,10
ZN 1010 DATA 141,198,2,169,116,141,200,2,
   169,11,141,217,2,169,2,141,218,2,169,1
   92,141,14,212,88,96,165,0,41,236
YZ 1020 DATA 105,2,72,165,1,41,236,105,2,
   141,10,212,142,22,208,140,23,208,141,2
   4,208,104,141,25,208,206,123,81,96
CS 1030 DATA 248,160,3,185,125,81,24,105,
   1,153,125,81,89,129,81,208,6,153,125,8
   1,136,16,236,216,160,15,162,2,189
KV 1040 DATA 125,81,72,41,15,29,133,81,15
   3,20,1,104,74,74,74,74,136,29,133,81,1
   53,20,1,136,136,202,16,227,96
GX 1050 DATA 172,124,81,136,16,17,160,7,2
   38,92,81,173,92,81,201,40,144,5,169,0,
   141,92,81,140,4,212,140,124,81
LS 1060 DATA 96,72,138,72,152,72,32,201,8
   0,32,14,81,32,145,80,32,44,81,32,87,80
   ,104,168,104,170,104,64,160,0
QD 1070 DATA 162,35,141,10,212,140,26,208
   ,142,0,212,165,5,168,24,105,14,170,165
   ,7,133,0,24,105,12,133,1,169,6
WP 1080 DATA 141,123,81,200,200,230,0,202
   ,202,198,1,32,54,80,208,243,169,6,141,
   10,212,141,123,81,232,232,230,0,136
SV 1090 DATA 136,198,1,32,54,80,208,243,9
   6,141,10,212,173,197,2,141,23,208,173,
   198,2,141,24,208,173,200,2,141,10
SK 1100 DATA 212,141,26,208,169,34,141,0,
   212,96,173,42,2,208,14,169,2,141,28,2,
   198,5,165,5,74,176,2,198,7
LY 1110 DATA 96,16,66,64,156,0,2,0,2,0,2,
   0,2,0,2,0,2,0,2,0,2,0,2,0,2,160,87
   ,35,1,32,66,32,158,0,2,0,2,0,2,0,2
JA 1120 DATA 0,2,0,2,0,2,0,2,0,2,0,2,0,2,
   65,64,81,0,0,0,0,0,0,18,96,96,80,208
OZ 1130 DATA 144,208,33,116,33,114,41,0,9
   9,47,109,48,117,52,101,50,115,0,50,117
   ,44,101,0,47,107,1,78,14,78,14,208
XA 1140 DATA 209,26,144,147,26,210,210,14
   ,78,14,78,33,116,33,114,41,0,99,47,109
   ,48,117,52,101,50,115,0,50,117,44,101
ZR 1150 DATA 0,47,107,1,78,16,66,64,188   ●
```

How to Type in the Listings

and get them right!

The program listings in PAGE 6 are prepared carefully to ensure that they can be typed in as easily as possible. Before typing any listings ensure that you are familiar with the use of the Shift and CONTROL and INVERSE keys as outlined in your computer manual. The listings are prepared to match exactly what you see on screen. Every character that you may see in a listing is included in the chart below for cross reference. By using TYPO 3 you can ensure that you type in the programs EXACTLY as they are printed. Remember a single typing mistake may mean a program will not run.

WHAT ARE THOSE CODES?

Each line of a program begins with a special two letter code. THESE SHOULD NOT BE TYPED IN. They are used by the program TYPO to check that you have typed each line correctly. IF YOU HAVE NOT ALREADY TYPED IN THE TYPO 3 LISTING PLEASE DO SO NOW. The program can be used as you type in each line of a program or to check an already typed program. The code for each line will match but if you have problems check the listing conventions below carefully, you are most probably typing a CONTROL character incorrectly. TYPO 3 cannot check if a line has been missed so if you have problems in running a listing count the lines in the program and ensure none are missing. If the TYPO codes match and the program still does not run, LIST it to cassette or disk using LIST "C:" or LIST "D:filename", switch off the computer, re-boot and then ENTER the program using ENTER "C:" or ENTER "D:filename". Save this version in the normal way.

HOW TO USE TYPO 3

1. Type in the listing carefully for although you can use TYPO 3 to check itself (see 6 below) it may not work if you have made mistakes.

2. SAVE or CSAVE a copy of the program.

3. Each time you want to type in a program listing RUN TYPO 3 *first*. The program will install a machine code routine in memory and then delete itself. Now type in a line as shown in the magazine *excluding the first two letter code* and press RETURN.

4. A two letter code will appear at the top left of your screen. If this code matches the one in the magazine carry on and type the next line. Note, the code will not match if you use abbreviations. If you prefer to use abbreviations LIST the line you have just typed, move the cursor to that line and press RETURN. The code should now match.

5. If the code does not match, use the editing keys to correct the line and press RETURN again. Repeat if necessary until the codes match.

6. To check a line you have already typed LIST the line, place the cursor on that line and press RETURN.

7. When you have finished a listing just SAVE or CSAVE it in the normal way.

You can type in a program without using TYPO 3 and then check it by SAVEing or CSAVEing a copy of the program, running TYPO 3 and then LOADing or CLOADing your program and proceeding as in step 6 above.

Always SAVE or CSAVE a program before running it and always use TYPO before telling us that a program will not run.

```
EI 1 REM ********************************
AL 2 REM *  TYPO III by Alec Benson     *
         *          June 1985           *
SA 3 REM * A proofreader for ANTIC and *
         *    PAGE 6 based on TYPO II   *
         * published by ANTIC magazine *
EL 4 REM ********************************
SG 100 GRAPHICS 0
WG 110 FOR I=1536 TO 1791:READ A:CK=CK+A:
   POKE I,A:NEXT I
CG 120 IF CK<>30765 THEN ? "Error in DATA
    statements - Check Typing":END
YM 130 A=USR(1536)
VT 140 ? :? "TYPO III is up and running":
   NEW
MA 1000 DATA 104,160,0,185,26,3,201,69
HG 1010 DATA 240,8,200,200,200,192,36,208
QB 1020 DATA 242,96,200,169,79,153,26,3
RK 1030 DATA 200,169,6,153,26,3,162,0
RR 1040 DATA 189,0,228,157,79,6,232,224
TO 1050 DATA 15,208,245,169,93,141,83,6
KC 1060 DATA 169,6,141,84,6,173,4,228
EU 1070 DATA 105,0,141,95,6,173,5,228
BK 1080 DATA 105,0,141,96,6,169,0,162
KK 1090 DATA 3,149,203,202,16,251,96,0
ZR 1100 DATA 0,0,0,0,0,0,0,0
LD 1110 DATA 0,0,0,0,0,0,32,94
JM 1120 DATA 6,8,72,201,155,240,55,230
TV 1130 DATA 203,133,209,138,72,169,0,133
TW 1140 DATA 208,162,8,10,38,208,6,209
MF 1150 DATA 144,7,24,101,203,144,2,230
RL 1160 DATA 208,202,208,239,133,207,24,1
   65
TM 1170 DATA 204,101,207,133,204,165,205,
   101
AW 1180 DATA 208,133,205,165,206,105,0,13
   3
XH 1190 DATA 206,104,170,104,40,96,138,72
NR 1200 DATA 152,72,162,0,134,207,134,208
GF 1210 DATA 160,24,6,204,38,205,38,206
EA 1220 DATA 38,207,38,208,56,165,207,233
TM 1230 DATA 164,170,165,208,233,2,144,4
SK 1240 DATA 134,207,133,208,136,208,227,
   162
CB 1250 DATA 8,165,207,133,204,165,208,6
XN 1260 DATA 204,42,201,26,144,4,233,26
MB 1270 DATA 230,204,202,208,242,133,205,
   169
BC 1280 DATA 128,145,88,200,192,40,208,24
   9
WV 1290 DATA 165,204,105,160,160,3,145,88
QA 1300 DATA 165,205,24,105,161,200,145,8
   8
MQ 1310 DATA 32,69,6,104,168,76,153,6
```

Lower case · Inverse lower · Upper case or Shift · Inverse Upper or Shift · CTRL · Inverse CTRL

Lower case	Upper case or Shift
1	!
2	"
3	#
4	$
5	%
6	&
7	'
8	@
9	(
0	)
<	
>	
a	A
b	B
c	C
d	D
e	E
f	F
g	G
h	H
i	I
j	J
k	K
l	L
m	M
n	N
o	O
p	P
q	Q
r	R
s	S
t	T
u	U
v	V
w	W
x	X
y	Y
z	Z
-	_
=	|
;	:
+	\
*	^
,	[
.	]
/	?

ESC ESC
ESC CTRL -
ESC CTRL =
ESC CTRL +
ESC CTRL *
ESC SHIFT CLEAR
ESC DELETE
ESC TAB
ESC SHIFT DELETE
ESC SHIFT INSERT
ESC CTRL TAB
ESC SHIFT TAB
ESC CTRL 2
ESC CTRL DELETE
ESC CTRL INSERT

INVERSE SPACE

Greedy Caterpillars

Greedy Caterpillars is a two player game in which you must race your opponent to eat as many apples in the maze as you can. By getting to the part of the maze where there are more apples before your opponent you can get a winning score. The player with the highest score after the chosen number of rounds is the winner.

TYPING IT IN

DISK USERS should type in Listings 1 and 2 separately, check them with TYPO 3, and then SAVE them to disk. You can use any filename for the first listing but listing 2 must be saved as 'D:GREEDY2'. Running the first listing will then automatically run listing 2. There is no need for you to type in listing 3.

CASSETTE USERS should type in Listing 3 FIRST and, after checking it with TYPO 3, save it to tape using SAVE 'C:'. Leave the tape in position so that listings 1 & 2 can be saved immediately following listing 1. Listing 1 should then be typed in and CSAVED to tape immediately following listing 3. Leave the tape in position and type in listing 2 then CSAVE it immediately after listing 1. Rewind the tape and type RUN 'C:' and the program will load and run automatically.

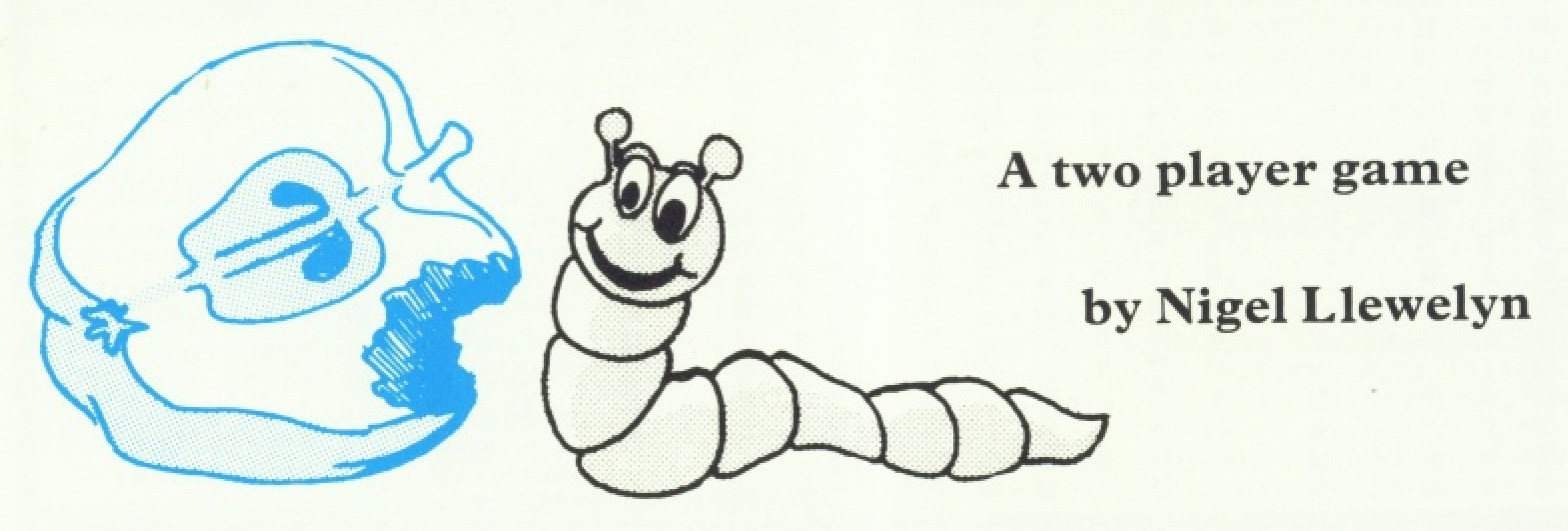
PLAYING THE GAME

You must firstly plug two joysticks in ports 1 and two of your computer and then run your version of the program as stated. After the first program has loaded you will be presented with a title screen as the second part of the program is loaded. When Billy and Benny, the two caterpillars, appear you may select the number of screens to play by using the OPTION key. Pressing START will begin play.

The object is to race your caterpillar round the maze to beat your opponent to the apples. Fifty apples will fall randomly into the maze and you will score points for each apple eaten. The points will increase on each screen. Once you have completed the selected number of screens the player with the highest score will be declared the winner.

That's all there is to it, but it is fun!

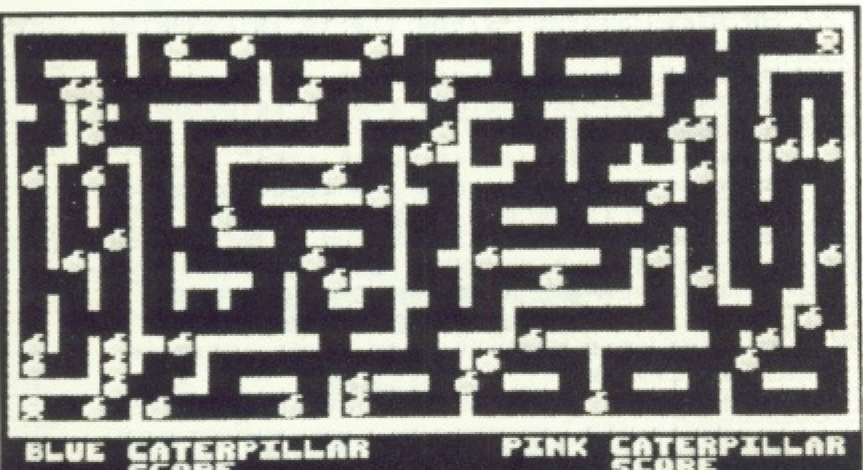
```
EI 1 REM ********************************
ZL 2 REM **    GREEDY CATERPILLARS     **
HQ 3 REM **           BY               **
TG 4 REM **      NIGEL LLEWELLYN       **
KA 5 REM **                            **
UQ 6 REM **        LISTING ONE         **
ZC 7 REM ** -------------------------- **
ZZ 8 REM ** PAGE 6 MAGAZINE - ENGLAND **
EQ 9 REM ********************************
KT 10 CS=PEEK(106)-8:CSBASE=CS*256:GRAPHI
   CS 0:POKE 559,0:POKE 621,1:POKE 756,CS
   :RESTORE
PG 20 FOR I=0 TO 247:READ J:POKE CSBASE+I
   ,J:NEXT I
KN 30 FOR I=264 TO 471:READ J:POKE CSBASE
   +I,J:NEXT I
WU 40 FOR I=1536 TO 1546:READ J:POKE I,J:
   NEXT I
VM 50 FOR I=1550 TO 1565:READ J:POKE I,J:
   NEXT I
HM 60 DL=PEEK(560)+PEEK(561)*256
JZ 70 POKE DL+3,71:POKE DL+6,134:POKE DL+
   8,6:POKE DL+9,7:POKE DL+13,7:POKE DL+1
   4,7
KQ 80 POKE DL+23,65:POKE DL+24,PEEK(560):
   POKE DL+25,PEEK(561)
TU 90 POSITION 0,0:? "stephens    softwar
   e"
NS 100 POSITION 21,0:? "stephens  softwar
   e"
LH 110 POSITION 11,1:? "STEPHENS  SOFTWAR
   E"
IN 120 POSITION 1,2:? "stephens  software
   "
TV 130 POSITION 20,2:? "stephens    softw
   are"
GG 140 POSITION 16,4:? "PRESENTS"
NX 150 POSITION 7,6:? "GREEDY"
PO 160 POSITION 24,6:? "CATERPILLARS"
VB 170 POSITION 7,9:? "WRITTEN BY NIGEL L
   LEWELLYN"
SY 180 POSITION 13,11:? "COPYRIGHT 1986"
XA 190 POSITION 14,14:? "NOW  LOADING"
YU 200 POKE 512,14:POKE 513,6
NL 210 POKE 54286,192:POKE 559,34
```



A two player game

by Nigel Llewelyn

```
OE 215 REM CASSETTE USERS  --DO NOT
           TYPE LINE 220 AND REMOVE
           REM IN LINE 225
NE 220 RUN "D:GREEDY2"
JS 225 REM POKE 764,12:A=USR(1570)
ON 299 REM  NEW CHARACTER DATA
EJ 300 DATA 0,0,0,0,0,0,0,0
AL 310 DATA 0,25,25,42,42,21,21,40
JT 320 DATA 0,88,88,168,168,148,148,40
JM 330 DATA 0,89,89,170,170,149,149,0
BK 340 DATA 0,89,89,170,170,149,149,40
DB 350 DATA 40,24,24,40,40,20,20,40
CN 360 DATA 40,88,88,168,168,148,148,40
JV 370 DATA 40,25,25,42,42,21,21,40
YB 380 DATA 40,25,25,42,42,21,21,0
AA 390 DATA 40,89,89,170,170,149,149,0
IG 400 DATA 40,88,88,168,168,148,148,0
KI 410 DATA 0,24,24,40,40,20,20,0
RA 420 DATA 40,24,24,40,40,20,20,0
UI 430 DATA 0,24,24,40,40,20,20,40
SC 440 DATA 0,88,88,168,168,148,148,0
QY 450 DATA 0,25,25,42,42,21,21,0
VF 460 DATA 0,63,51,51,63,63,63,63
FY 470 DATA 0,12,60,12,12,12,63,63
```




```
RX 480 DATA 0,63,63,3,63,48,63,63
DS 490 DATA 0,63,63,3,15,3,63,63
XJ 500 DATA 0,51,51,51,63,63,3,3
PV 510 DATA 0,63,63,48,63,3,63,63
YI 520 DATA 0,63,63,48,63,51,63,63
PK 530 DATA 0,63,63,3,3,3,3,3
UB 540 DATA 0,63,63,51,63,51,63,63
LS 550 DATA 0,63,63,51,63,3,63,63
AZ 560 DATA 10,8,20,85,85,85,85,20
MS 570 DATA 60,255,195,255,255,60,60,195
GU 580 DATA 60,255,251,191,255,60,60,195
AE 590 DATA 40,170,130,170,170,40,40,130
GE 600 DATA 40,170,174,234,170,40,40,130
OU 610 DATA 0,28,62,119,127,119,119,119
OY 620 DATA 0,126,115,126,127,115,127,126
WG 630 DATA 0,63,112,112,112,127,127,63
NX 640 DATA 0,126,115,115,115,127,127,126
KW 650 DATA 0,127,112,124,112,127,127,127
NN 660 DATA 0,127,112,124,112,112,112,112
YP 670 DATA 0,63,112,112,119,115,127,62
BW 680 DATA 0,119,119,127,127,127,119,119
XE 690 DATA 0,127,28,28,28,127,127,127
VM 700 DATA 0,14,14,14,14,110,126,60
OJ 710 DATA 0,115,119,126,124,126,119,115
UT 720 DATA 0,96,96,96,96,127,127,127
TO 730 DATA 0,99,127,127,127,107,99,99
MB 740 DATA 0,115,123,127,127,119,115,115
LN 750 DATA 0,62,119,119,119,127,127,62
WP 760 DATA 0,126,115,127,126,112,112,112
LU 770 DATA 0,62,119,119,119,127,126,63
YF 780 DATA 0,126,115,127,126,119,119,119
MU 790 DATA 0,63,127,112,126,7,127,126
ZA 800 DATA 0,127,127,28,28,28,28,28
FA 810 DATA 0,119,119,119,119,119,127,62
OO 820 DATA 0,119,119,119,119,119,127,62,28
OL 830 DATA 0,99,99,107,127,127,127,99
RX 840 DATA 0,119,119,28,28,119,119,119
HK 850 DATA 0,119,119,127,28,28,62,62
JT 860 DATA 0,127,127,14,56,127,127,127
HY 890 REM  DISPLAY INTERRUPT DATA
TG 900 DATA 72,169,0,141,10,212,141,24,20
   8,104,64
AY 910 DATA 72,173,10,210,9,12,141,22,208
   ,169,0,141,24,208,104,64
```

```
EI 1 REM ********************************
ZL 2 REM **    GREEDY CATERPILLARS     **
HQ 3 REM **           BY               **
TG 4 REM **      NIGEL LLEWELLYN       **
KA 5 REM **                            **
SV 6 REM **       LISTING TWO          **
ZC 7 REM ** ------------------------- **
ZZ 8 REM ** PAGE 6 MAGAZINE - ENGLAND **
EQ 9 REM ********************************
TV 10 POKE 2,52:POKE 3,185:POKE 9,2:TRAP
   10000
PB 11 REM 400/800 OWNERS USE POKE 2,64
      INSTEAD OF POKE 2,52
AG 20 DIM X1(5),X2(5),ST(15)
WN 30 FOR I=1 TO 15:ST(I)=0:NEXT I
GI 40 ST(7)=1:ST(11)=-1:ST(13)=40:ST(14)=
   -40
YE 50 SCNO=1:CS=PEEK(106)-8
HZ 60 GOTO 1000
NZ 99 REM  M A I N    L O O P
AM 100 S=PEEK(632):Z=X1(1)+ST(S)
QK 110 IF PEEK(Z)=26 THEN SOUND 0,125,0,1
   2:POKE Z,0:APL=APL-1:SC1=SC1+SC:POSITI
   ON 6,22:? SC1:SOUND 0,0,0,0
XW 120 IF PEEK(Z)=0 THEN X1(1)=Z:POKE 77,
   0:SOUND 2,80,12,10:SOUND 2,0,0,0
JQ 130 S1=PEEK(633):Z1=X2(1)+ST(S1)
EX 140 IF PEEK(Z1)=26 THEN SOUND 1,100,4,
   12:POKE Z1,0:APL=APL-1:SC2=SC2+SC:POSI
   TION 28,22:? SC2:SOUND 1,0,0,0
MZ 150 IF PEEK(Z1)=0 THEN X2(1)=Z1:SOUND
   3,30,12,10:SOUND 3,0,0,0
HM 160 POKE X1(5),0:POKE X1(2),28:POKE X1
   (1),27
HY 170 POKE X2(5),0:POKE X2(2),156:POKE X
   2(1),155
KQ 180 IF APL=0 THEN GOTO 220
VB 190 X1(5)=X1(4):X1(4)=X1(3):X1(3)=X1(2
   ):X1(2)=X1(1)
CS 200 X2(5)=X2(4):X2(4)=X2(3):X2(3)=X2(2
   ):X2(2)=X2(1)
LJ 210 GOTO 100
RM 220 SCREEN=SCREEN+1
LY 230 IF SCREEN=SCNO+1 THEN GOTO 1000
RO 239 REM  SETUP AND DRAW REST SCREEN
UU 240 GRAPHICS 0:POKE 16,64:POKE 53774,6
   4:POKE 559,0:POKE 752,1:POKE 756,CS
UK 250 DL=PEEK(560)+PEEK(561)*256
WD 260 POKE DL+3,71:POKE DL+6,7+128:POKE
   DL+11,6:POKE DL+12,6:POKE DL+17,6:POKE
    DL+18,6
YP 270 POKE DL+26,65:POKE DL+27,PEEK(560)
   :POKE DL+28,PEEK(561)
BC 280 POKE 512,0:POKE 513,6:POKE 54286,1
   92
IT 290 POSITION 2,0:? "gREEdY":POSITION 2
   6,0:? "CAtERPILlARS"
TU 300 POSITION 3,3:? "YOU HAVE JUST EAT
   YOUR WAY THROUGH":POSITION 6,5:? "ScRe
   En ";SCREEN-1
UW 310 POSITION 5,8:? "GET READY TO EAT T
   HE APPLES ON":POSITION 6,10:? "sCrEeN
   ";SCREEN
GG 320 IF SCREEN=SCNO THEN POSITION 6,11:
   ? "THIS WILL BE THE LAST SCREEN"
LD 330 POSITION 2,15:? "BLUE CATERPILLAR
      PINK CATERPILLAR"
QJ 340 POSITION 7,16:? "SCORE":POSITION 2
   8,16:? "SCORE"
VF 350 POSITION 7,17:? SC1:POSITION 28,17
   :? SC2
RH 360 POKE 559,34
WU 370 FOR DELAY=0 TO 2000:NEXT DELAY
AJ 399 REM  SETUP AND DRAW MAZE SCREEN
MS 400 GRAPHICS 0:POKE 16,64:POKE 53774,6
   4:POKE 559,0:POKE 82,0:POKE 752,1:POKE
    756,CS
GB 410 POKE 708,186:POKE 709,88:POKE 710,
   122:POKE 711,58
VR 420 TL=PEEK(88)+PEEK(89)*256
UI 430 DL=PEEK(560)+PEEK(561)*256
AB 440 POKE DL+3,68:FOR I=6 TO 23
ZW 450 POKE DL+I,4:NEXT I:POKE DL+24,132
BA 460 POKE 512,0:POKE 513,6:POKE 54286,1
   92
FZ 500 POSITION 0,0
IZ 510 ? "!#########$#####################$#########$#############
   ###$#########"";
```

```
LE 520 ? "%        %              ,       %
    ,      %";
DO 530 ? "% /#. , /#. - /#.   /#. , /#. !
   .    !#####&";
YM 540 ? "%           %      -           %
    - %    %";
TM 550 ? "'. - + /$#####)#. !#). !#. /$#####*
   /& , - %";
KE 560 ? "%  %    %       %    %    %
    %    % %";
TZ 570 ? "% !* /▣ % !#########* - /& !. %  -
   - % - , %";
MA 580 ? "% %    % % %       %   '##*  , /)#
   & % %    %";
RJ 590 ? "% % - % % , /#####. '. %
   , % , - %";
VO 600 ? "% % , % ,          %  % /#. /#.
    %    % %";
RS 610 ? "% %    %   /#. /#. %  %
   - % - % %";
BD 620 ? "% , - % -          % /& /#####. -
   % % , % %";
AV 630 ? "%   % % '#$. -  !#&  %       %
   % %   % %";
CT 640 ? "% - , % , ,  % /* '. , !#########*
   % (. !* %";
HG 650 ? "% %    %      %    %    %
   %    %   %";
RX 660 ? "% , - '. !#####). /#* /$#* /#$#####
   ). + , /&";
DZ 670 ? "%   % ,  %               ,      %
          %";
HG 680 ? "'#####*   /* /#. - /#.   /#. , /#
   . - /#. %";
FU 690 ? "%      -           %      -
    %      %";
WO 700 ? "(#########)##############)#########)################
   ####)#########*";
SZ 710 ? " BLUE CATERPILLAR       PINK CAT
   ERPILLAR"
VK 720 ? "      SCORE                      SCO
   RE"
MD 730 POSITION 6,22:? SC1:POSITION 28,22
   :? SC2
ZT 740 POSITION 16,23:? "SCREEN ";SCREEN;
   :POKE 559,34
GJ 749 REM  PLACE 50 APPLES IN MAZE 
TN 750 FOR I=1 TO 50
ZP 760 AP=INT(RND(0)*719)+40
TW 770 IF PEEK(TL+AP)<>0 THEN 760
FL 780 BEG=AP-INT(AP/40)*40
UZ 800 C=PEEK(TL+BEG)
VW 810 FOR J=TL+BEG TO TL+AP-40 STEP 40
BK 820 Z=PEEK(J+40):POKE J,C:POKE J+40,26
   :C=Z
KB 830 SOUND 0,J/3,10,10:NEXT J:SOUND 0,0
   ,0,0:NEXT I:APL=50
CX 840 FOR I=1 TO 5:X1(I)=0:X2(I)=0:NEXT
   I
KP 850 X1(1)=TL+721:X2(1)=TL+78
JE 860 SC=SCREEN*5:GOTO 100
KO 999 REM  TITLE SCREEN 
PF 1000 GRAPHICS 0:POKE 16,64:POKE 53774,
   64:POKE 559,0:POKE 752,1:POKE 756,CS:P
   OKE 710,118:POKE 711,122:POKE 709,58
ZZ 1010 POKE 708,202
IT 1020 DL=PEEK(560)+PEEK(561)*256
HP 1030 TL=PEEK(88)+PEEK(89)*256
VK 1040 POKE DL+3,70:POKE DL+6,6+128
IH 1050 POKE DL+9,7:POKE DL+10,7
XH 1060 POKE DL+16,4:POKE DL+17,4:POKE DL
   +18,4
UB 1070 POKE DL+28,65:POKE DL+29,PEEK(560
   ):POKE DL+30,PEEK(561)
MA 1080 POKE 512,0:POKE 513,6:POKE 54286,
   192
HN 1090 IF SCREEN=0 THEN POSITION 1,0:? "
   STEPHENS  SOFTWARE":POSITION 16,1:? "P
   RESENTS"
QB 1100 POSITION 2,3:? "GREEDY":POSITION
   26,3:? "CATERPILLARS"
PS 1110 POSITION 14,5:? "INTRODUCING":POS
   ITION 6,7:? "BILLY      AND      BEN
   NY"
RY 1120 POSITION 6,9:? "<<<;
   =>>>"
FH 1130 POSITION 10,13:? "PRESS START TO
   BEGIN":POSITION 2,15:? "PRESS OPTION F
   OR NUMBER OF SCREENS ";SCNO
TY 1140 POSITION 2,17:? "BLUE CATERPILLAR
      PINK CATERPILLAR":POSITION 8,18:?
   SC1:POSITION 28,18:? SC2:POKE 559,34
NB 1150 IF SC1>SC2 THEN POSITION 5,20:? "
   THE WINNER"
MM 1160 IF SC2>SC1 THEN POSITION 25,20:?
   "THE WINNER"
ZL 1170 IF SC1=SC2 THEN POSITION 11,20:?
   "THE GAME IS A DRAW"
CX 1240 X1(1)=TL+370:X2(1)=TL+388
ZG 1250 FOR I=2 TO 5
WL 1260 X1(I)=X1(1)-(I-1):X2(I)=X2(1)+(I-
   1):NEXT I
UW 1270 FOR I=0 TO 16:GOSUB 1450
ZZ 1280 POSITION I,11:? " :":POSITION 37-
   I,11:? ": "
FB 1290 FOR D=0 TO 12:NEXT D:NEXT I
QP 1299 REM  MOVEMENT OF CATERPILLARS 
CS 1300 Z1=1:Z2=-1:FOR I=0 TO 7:GOSUB 140
   0:NEXT I
UF 1310 Z1=40:Z2=40:GOSUB 1400
AG 1320 Z1=-1:Z2=1:FOR I=0 TO 16:GOSUB 14
   00:NEXT I
UL 1330 Z1=40:Z2=40:GOSUB 1400
XH 1340 Z1=1:Z2=-1:FOR I=0 TO 16:GOSUB 14
   00:NEXT I
HB 1350 Z1=-40:Z2=-40:GOSUB 1400
AS 1360 Z1=-1:Z2=1:FOR I=0 TO 16:GOSUB 14
   00:NEXT I
HH 1370 Z1=-40:Z2=-40:GOSUB 1400
AH 1380 Z1=1:Z2=-1:FOR I=0 TO 8:GOSUB 140
   0:NEXT I:FOR D=0 TO 12:NEXT D
RL 1390 FOR I=0 TO 100:GOSUB 1450:FOR D=0
    TO 12:NEXT D:NEXT I:GOTO 1270
UU 1399 REM  MOVE CATERPILLARS AND 
            CHECK IF START IS PRESSED 
CM 1400 POKE X1(5),0:POKE X1(2),156:POKE
   X1(1),155
LQ 1410 POKE X2(5),0:POKE X2(2),158:POKE
   X2(1),157
YJ 1420 X1(5)=X1(4):X1(4)=X1(3):X1(3)=X1(
   2):X1(2)=X1(1)
HC 1430 X2(5)=X2(4):X2(4)=X2(3):X2(3)=X2(
   2):X2(2)=X2(1)
PA 1440 X1(1)=X1(1)+Z1:X2(1)=X2(1)+Z2
NR 1450 READ J:IF J=-1 THEN RESTORE 6000:
   GOTO 1450
NW 1460 SOUND 0,J,10,4:SOUND 1,J*2,10,2
ET 1470 IF PEEK(53279)=3 AND KEY=0 THEN S
   CNO=SCNO+1-(SCNO=9)*9:KEY=1
VC 1480 IF PEEK(53279)=7 AND KEY=1 THEN K
   EY=0:POSITION 37,15:? SCNO
FC 1490 IF PEEK(53279)<>6 THEN RETURN
OH 1500 SCREEN=1:SC1=0:SC2=0
UG 1510 SOUND 0,0,0,0:SOUND 1,0,0,0
YG 1520 POKE 77,0:POP :GOTO 400
HH 5900 REM  MUSICAL DATA 
BV 6000 DATA 91,81,72,91,81,96,91,60
QL 6010 DATA 60,53,72,60,60,72,72,81
DI 6020 DATA 68,72,81,91,72,60,68,72
DP 6030 DATA 91,81,96,91,91,81,72,81
GK 6040 DATA 91,-1
GJ 10000 RUN
```

```
EI 1 REM ******************************
ZL 2 REM **    GREEDY CATERPILLARS     **
HQ 3 REM **           BY               **
TG 4 REM **     NIGEL LLEWELLYN        **
KA 5 REM **                            **
PR 6 REM **        LISTING THREE       **
ZC 7 REM ** ------------------------   **
ZZ 8 REM ** PAGE 6 MAGAZINE - ENGLAND **
EQ 9 REM ******************************
AY 10 REM
JF 20 REM AUTOMATIC LOAD AND RUN
TF 30 REM BY JASON HALPIN
OQ 40 REM PAGE 6 ISSUE 20
BC 50 REM
XN 60 GRAPHICS 0:POKE 621,1
UV 70 POKE 752,1:? :POKE 710,0
CN 80 FOR I=1570 TO 1588:READ A
NJ 90 POKE I,A:NEXT I
XP 100 POKE 764,12:A=USR(1570)
GX 110 DATA 162,253,154,169,183,72
DX 120 DATA 169,84,72,169,4,32,182
CM 130 DATA 187,169,255,76,4,187
```

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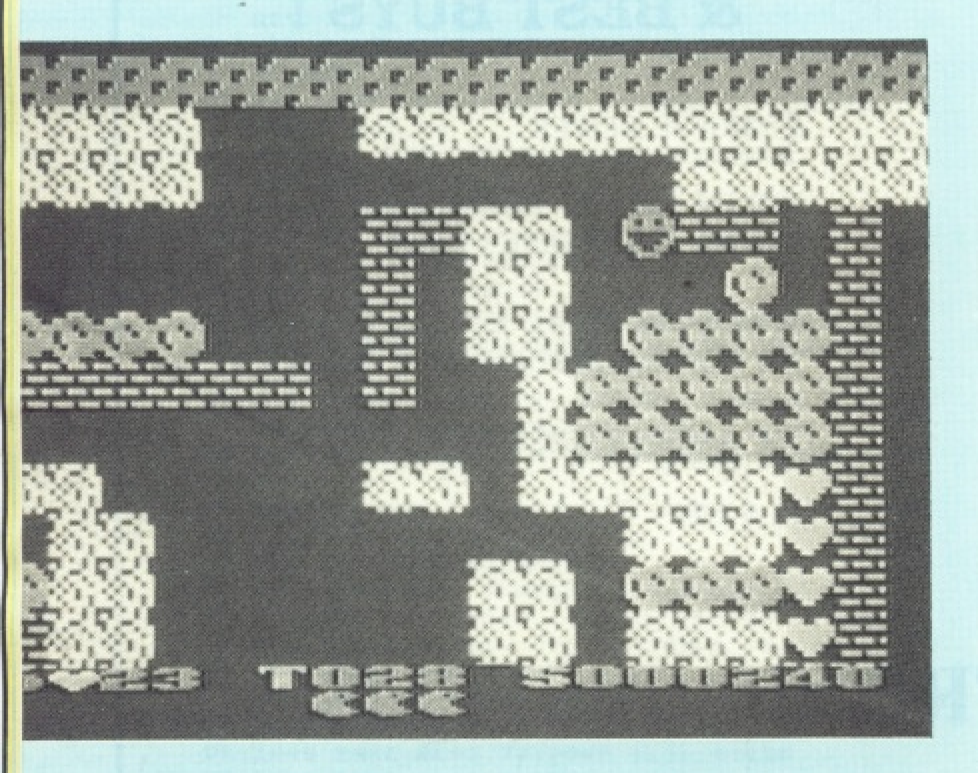
MUNCHY MADNESS

If you found Munchy Madness (Issue 24) too easy or too hard, or have completed all the screens, then worry no more for the Munchy Madness Screen Designer will let you design your own screens ranging from the ridiculously easy to the impossibly hard! Don't worry, the Screen Designer is simple to use, requiring just a joystick and a little time. I wish that I had written it before designing the original screens!

GET DESIGNING

Type in the main program, check it as you go with TYPO 3 and SAVE a copy to disk. RUN the program and away you go.

There are three main menus shown on the screen. You may select any item of these by moving the joystick up or down, left or right to highlight your choice. Pressing the joystick button will then put you in the mode selected. If you want to return to the main menu at any time, simply press any key. This works on any selection except Load and Save where you should press RETURN to abort.



by Paul Lay

> **SEND IN YOUR SCREENS!**
>
> **Send in YOUR Munchy Madness screens for others to enjoy. Maybe we can get together a whole collection of Munchy Madnesses! For each disk of screens you send in you can choose any of the PAGE 6 Issue disks or any of the disks from the PAGE 6 Library in exchange.**

DRAW MENU

This allows various objects to be drawn on the screen by simply selecting them, moving the cursor to the desired position and pressing the trigger. You select the item you wish to use by placing the cursor on it and pressing the trigger. This will present you with the screen you are designing and allow you to plot. Pressing any key will return you to the main menu to select another item. The elements you can use are as follows.

Space – spaces can be positioned anywhere on the screen except at the edges. If you wish to 'unplot' any character simply use a space to overwrite it.

Land – may be positioned anywhere except at the edges.

Wall – You may have a wall anywhere you wish except over the players start position or the exit position.

Edge – the same rules apply as with Walls.

Heart – may be positioned anywhere on the screen except at the edges or over a players start or the exit position. There must be at least one heart on each screen up to a maximum of 99 and you must ensure that the number of hearts is the same as, or more than, the Number selected in the Set menu.

Boulders – can be anywhere, subject to the same rules as Walls.

One final point to note is that the total number of hearts and boulders combined must not exceed 256.

SET MENU

This allows various parameters of the screen to be altered. Coupled with the DRAW facilities this allows an almost infinite number of screens to be designed. Numeric parameters are selected by moving the joystick up and down to increase the value and by moving left or right to select other digits. Press the trigger when you have finished.

Start – allows the player's start position to be set by positioning the cursor and then pressing the trigger. Note that the start can only be positioned in the top left area of the screen and can only be positioned over spaces or land. The default start position is 1,1.

SCREEN DESIGNER

Exit – can be set anywhere on the screen (except over a heart or boulder) by positioning the cursor and pressing the trigger. The default exit position is 2,2.

Colours – may be altered to whatever you wish. After selecting a colour register (0 – 5) the characters used in the screens will be displayed and the colour can be altered by moving the joystick up or down to alter the hue or left and right to alter luminance. Press the trigger when finished.

Time – allows you to set the time in which a particular screen must be completed. This, coupled with the amount of detail on screen will determine the difficulty level of your screens. The default time is 100 but any time between 40 and 999 may be chosen.

Number – is the number of hearts needed to complete the screen. You must have the same number, or more, hearts otherwise you cannot complete the screen. For an easier screen ensure that you have more hearts on screen than the number used here.

SCREEN MENU

This is where all your hard work can be saved or loaded or where you can scrap it all and start again!

Clear – resets the current screen. To be safe you will be prompted to confirm your decision. Move the joystick in any direction to alter the response and press the trigger when ready.

Load – will allow you to load a previously saved screen to continue working on it. Simply enter the correct filename when prompted. If you wish to abort, press RETURN without typing a filename.

Save – allows the current screen to be saved to disk. If there are any errors in the design of the screen they will be reported and the save aborted. When prompted to enter a filename, you may return to the main menu by pressing RETURN without typing a filename.

MAKING A NEW PROGRAM

Once your new screens have been designed and saved to disk, it is time to combine them with your original Munchy Madness object code program. Note that it is the program created by running the Munchy Madness listing from issue 27 that you must use and not the BASIC listing itself. The Munchy Madness Joiner program does it all for you, quickly and simply.

THE JOINER PROGRAM

Once you have typed, checked and saved listing 2, and designed and saved your screens, just follow the steps shown. You don't have to use a new disk but it is probably wiser until you get used to the procedure.

1. Copy your original Munchy Madness object code program to a new disk (NOT the original BASIC listing).
2. Copy the new screen, or screens you have designed to the same disk. You may have between one and four screens.
3. Load the JOINER program and change the DATA statement in line 22 to that of your OLD Munchy Madness program.
4. Change the DATA statement in line 12 to the NEW filename you wish to use (Don't use the same name as the old program).
5. For each screen used change the DATA in lines 32, 42, 52 and 62 to the filenames you have used for each of your screens. If you have only one screen delete lines 42, 52 and 62. With two screens, delete lines 52 and 62 and if you have only three screens delete line 62.
6. Leave your new disk in drive 1 and RUN the joiner program. A new Munchy Madness program will be created on your disk with the filename entered in line 12.

That's it! You can now run the new Munchy Madness program with your own screens by using Option L of DOS in the usual way. You can have as many different versions of Munchy Madness as you wish. Get designing!

```
AE 10 REM ******************************
FW 12 REM *                            *
IU 14 REM * Page 6 Magazine Presents   *
GE 16 REM *                            *
AZ 18 REM *       Munchy Madness       *
DR 20 REM *  Screen Designer Program   *
FX 22 REM *                            *
VB 24 REM * -------------------------- *
GF 26 REM *                            *
NH 28 REM *     By Paul Lay, 1987      *
FU 30 REM *                            *
AK 32 REM ******************************
BI 34 REM
VJ 1000 REM allocate memory
TH 1010 RAMTOP=PEEK(106)
QQ 1020 CHSET=RAMTOP-16:DISP1=RAMTOP-8
IF 1030 DISP2=RAMTOP-4:DISP3=RAMTOP
FN 1040 REM set up array variables
HB 1050 GOSUB 5970
ZB 1060 REM set up labels
EP 1070 GOSUB 5920
QD 1080 REM set up character set
GM 1090 GOSUB 5860
TF 1100 REM set up design screen
BN 1110 GOSUB 5330
ES 1120 REM set up options screen
BD 1130 GOSUB 5500
YA 1140 REM reset display
ZY 1150 POKE 106,DISP3:GRAPHICS 0
DC 1160 POKE 752,1:PRINT
BN 1170 DLIST=PEEK(560)+256*PEEK(561)
UX 1180 LMSLO=DLIST+4:LMSHI=DLIST+5
TV 1190 REM select an option
AM 1200 GOSUB 5130
RZ 1210 REM select approprate action
SP 1220 ON MENU+1 GOTO 1240,1960,3170
GL 1230 REM draw menu routines
ZW 1240 POKE LMSLO,LO2:POKE LMSHI,HI2
OW 1250 POKE 88,LO2:POKE 89,HI2
BV 1260 POKE 709,14:POKE 710,0
JL 1270 POKE 712,138:POKE 756,CHSET
```

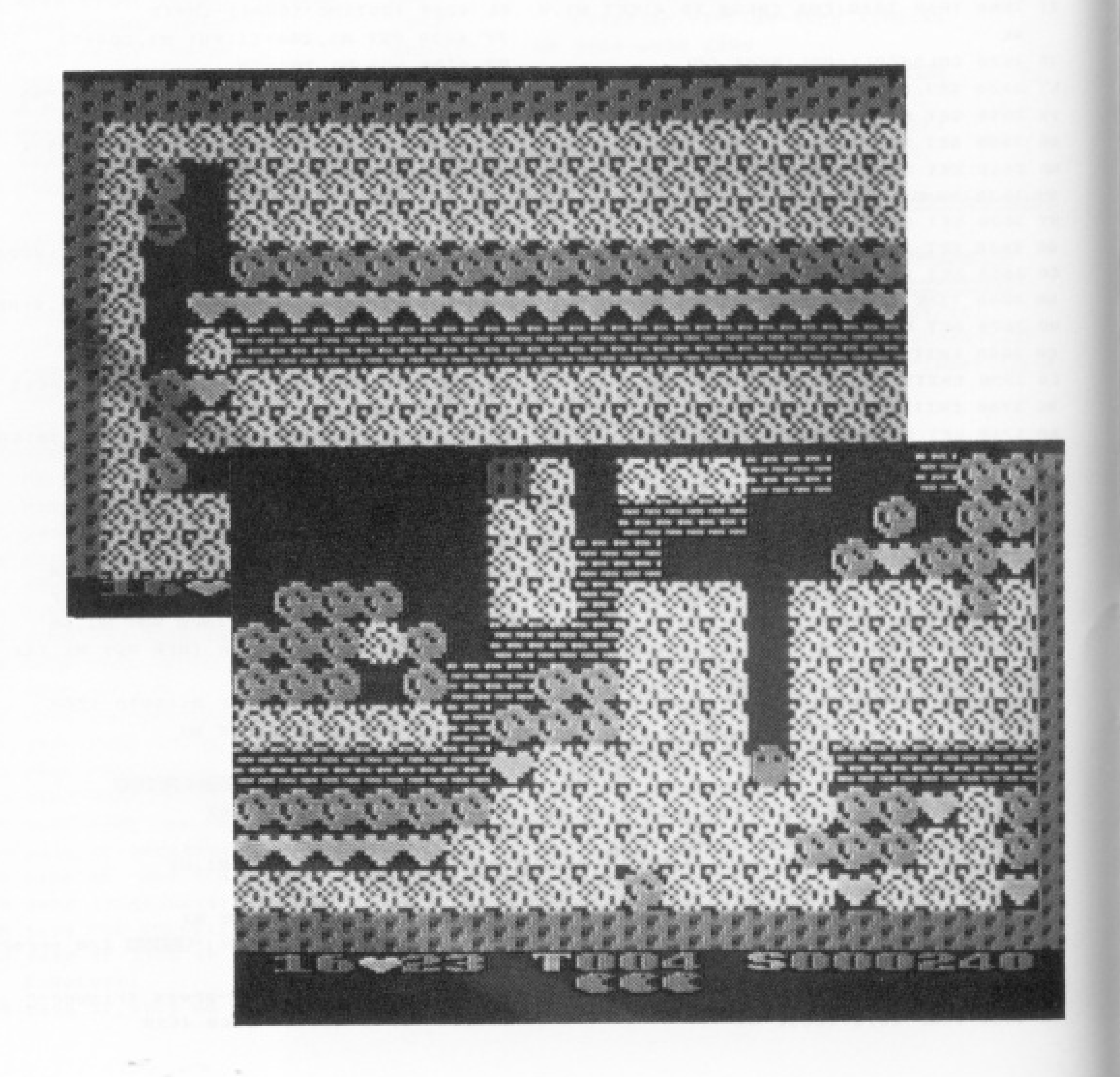
```
GT 1280 POKE 764,255
MW 1290 ON OPT+1 GOTO 1300,1310,1320,1330
   ,1340,1350
ZK 1300 CHAR=SPACE:GOTO 1360
LP 1310 CHAR=LAND:GOTO 1360
TR 1320 CHAR=WALL:GOTO 1360
HH 1330 CHAR=EDGE:GOTO 1360
GW 1340 CHAR=HEART:GOTO 1360
ZH 1350 CHAR=BOULDER
LX 1360 IF PEEK(764)<>255 THEN 1200
UE 1370 LOCATE XPOS,YPOS,OLDCHAR
RV 1380 PX=XPOS:PY=YPOS
RK 1390 PC=CURSOR:GOSUB 5100
AA 1400 OLDXPOS=XPOS:OLDYPOS=YPOS
WF 1410 IF  NOT STRIG(0) THEN 1540
IO 1420 ST=STICK(0)
SC 1430 IF ST=5 OR ST=6 OR ST=7 THEN XPOS
   =XPOS+1
KR 1440 IF ST=9 OR ST=10 OR ST=11 THEN XP
   OS=XPOS-1
PX 1450 IF ST=6 OR ST=10 OR ST=14 THEN YP
   OS=YPOS-1
PN 1460 IF ST=5 OR ST=9 OR ST=13 THEN YPO
   S=YPOS+1
ON 1470 PX=OLDXPOS:PY=OLDYPOS
UZ 1480 PC=OLDCHAR:GOSUB 5090
DK 1490 IF XPOS>39 THEN XPOS=0
YD 1500 IF XPOS<0 THEN XPOS=39
ZT 1510 IF YPOS>23 THEN YPOS=0
SH 1520 IF YPOS<0 THEN YPOS=23
RR 1530 GOTO 1360
MW 1540 PC=OLDCHAR:GOSUB 5100
VX 1550 ON OPT+1 GOTO 1560,1580,1600,1620
   ,1640,1680
AC 1560 IF XPOS=0 OR XPOS=39 OR YPOS=0 OR
    YPOS=23 THEN ERR=1:GOTO 1780
RM 1570 GOTO 1710
AI 1580 IF XPOS=0 OR XPOS=39 OR YPOS=0 OR
    YPOS=23 THEN ERR=1:GOTO 1780
RS 1590 GOTO 1710
ZH 1600 IF XPOS=STARTXPOS AND YPOS=STARTY
    POS THEN ERR=2:GOTO 1780
QW 1610 GOTO 1710
ZN 1620 IF XPOS=STARTXPOS AND YPOS=STARTY
    POS THEN ERR=2:GOTO 1780
RC 1630 GOTO 1710
ZY 1640 IF XPOS=0 OR XPOS=39 OR YPOS=0 OR
    YPOS=23 THEN ERR=1:GOTO 1780
ZW 1650 IF XPOS=STARTXPOS AND YPOS=STARTY
    POS THEN ERR=2:GOTO 1780
MQ 1660 IF XPOS=EXITXPOS AND YPOS=EXITYPO
    S THEN ERR=3:GOTO 1780
RO 1670 GOTO 1710
AK 1680 IF XPOS=0 OR XPOS=39 OR YPOS=0 OR
    YPOS=23 THEN ERR=1:GOTO 1780
AI 1690 IF XPOS=STARTXPOS AND YPOS=STARTY
    POS THEN ERR=2:GOTO 1780
MA 1700 IF XPOS=EXITXPOS AND YPOS=EXITYPO
    S THEN ERR=3:GOTO 1780
BX 1710 IF OLDCHAR=HEART THEN NUMHEARTS=N
    UMHEARTS-1
CK 1720 IF OLDCHAR=BOULDER THEN NUMBOULDE
    RS=NUMBOULDERS-1
TM 1730 IF (CHAR=HEART OR CHAR=BOULDER) A
    ND (NUMHEARTS+NUMBOULDERS)>=256) THEN E
    RR=4:GOTO 1780
VQ 1735 IF (CHAR=HEART) AND (NUMHEARTS)>=9
    9) THEN ERR=5:GOTO 1780
ZY 1740 IF CHAR=HEART THEN NUMHEARTS=NUMH
    EARTS+1
ZA 1750 IF CHAR=BOULDER THEN NUMBOULDERS=
    NUMBOULDERS+1
GE 1760 PC=CHAR:GOSUB 5090
EM 1770 OLDCHAR=CHAR:GOTO 1420
CF 1780 GRAPHICS 0
LH 1790 POKE 709,14:POKE 710,160
UZ 1800 POKE 712,28:POKE 756,224
PC 1810 POKE 752,1
YH 1820 PRINT CHR$(125);CHR$(253)
MK 1830 PRINT "
OZ 1840 PRINT "DRAWING ERROR"
HO 1850 PRINT "              ":PRINT :P
    RINT
TX 1860 ON ERR GOSUB 1910,1920,1930,1940,
    1945
GA 1870 PRINT :PRINT :PRINT "-press trigg
    er-"
CW 1880 IF STRIG(0) THEN 1880
GO 1890 IF  NOT STRIG(0) THEN 1890
QE 1900 GOTO 1240
LN 1910 PRINT "Error Illegal character po
    sitioned on":PRINT "       edge of scre
    en.":RETURN
HC 1920 PRINT "Error Illegal character po
    sitioned on":PRINT "       player's sta
    rt position.":RETURN
IM 1930 PRINT "Error Illegal character po
    sitioned on":PRINT "       exit positio
    n.":RETURN
KK 1940 PRINT "Error Too many hearts and
    boulders.":RETURN
KO 1945 PRINT "Error Too many hearts.":RE
    TURN
EJ 1950 REM set menu routines
GH 1960 ON OPT+1 GOTO 1980,2050,2100,2580
    ,2880
HP 1970 REM select start position
YH 1980 GOSUB 4830:IF ABORT THEN GOTO 120
    0
ZL 1990 IF XPOS>=20 OR YPOS>=12 THEN ERR=
    1:GOTO 4650
CH 2000 IF XPOS=0 OR YPOS=0 THEN ERR=2:GO
    TO 4650
AZ 2010 IF OLDCHAR=WALL OR OLDCHAR=EDGE O
    R OLDCHAR=HEART OR OLDCHAR=BOULDER THE
    N ERR=3:GOTO 4650
YY 2020 STARTXPOS=XPOS:STARTYPOS=YPOS
NW 2030 GOTO 1200
QY 2040 REM select exit position
XH 2050 GOSUB 4830:IF ABORT THEN GOTO 120
    0
HY 2060 IF OLDCHAR=HEART OR OLDCHAR=BOULD
    ER THEN ERR=4:GOTO 4650
YU 2070 EXITXPOS=XPOS:EXITYPOS=YPOS
OL 2080 GOTO 1200
PZ 2090 REM set colours
AW 2100 GRAPHICS 0
LD 2110 POKE 709,14:POKE 710,224
JQ 2120 POKE 712,76:POKE 752,1
GD 2130 POKE 764,255
WL 2140 PRINT :PRINT "
RQ 2150 PRINT "Set Colours"
BP 2160 PRINT "
VH 2170 PRINT :PRINT "Colour      Use"
OM 2180 PRINT :PRINT "0           Land"
OK 2190 PRINT :PRINT "1           Hearts"
MI 2200 PRINT :PRINT "2           Boulders
    & Walls"
RX 2210 PRINT :PRINT "3           Edges, Pl
    ayer & Exit"
RS 2220 PRINT :PRINT "4           Backgroun
    d"
TR 2230 PRINT :PRINT "Set colour"
CR 2240 POSITION 13,17:PRINT CHR$(CC+176)
WD 2250 FOR DELAY=1 TO 5:NEXT DELAY
LW 2260 IF PEEK(764)<>255 THEN 1200
VQ 2270 IF  NOT STRIG(0) THEN 2340
JD 2280 ST=STICK(0)
CR 2290 IF ST=6 OR ST=10 OR ST=14 THEN CC
    =CC+1
XB 2300 IF ST=5 OR ST=9 OR ST=13 THEN CC=
    CC-1
HG 2310 IF CC<0 THEN CC=4
GR 2320 IF CC>4 THEN CC=0
QN 2330 GOTO 2240
VJ 2340 IF  NOT STRIG(0) THEN 2340
FD 2350 GRAPHICS 18:POKE 756,CHSET
QR 2360 FOR CL=0 TO 4
NV 2370 POKE 708+CL,COLS(CL)
MI 2380 NEXT CL
VC 2390 SM=PEEK(88)+256*PEEK(89)
BZ 2400 POKE SM+26,1:POKE SM+33,134
VC 2410 POKE SM+66,197:POKE SM+73,66
ZJ 2420 POKE SM+106,131
MA 2430 POKE 764,255:VALUE=COLS(CC)
LT 2440 IF PEEK(764)<>255 THEN 2100
YY 2450 IF  NOT STRIG(0) THEN 2550
JB 2460 ST=STICK(0)
WN 2470 FOR DELAY=1 TO 5:NEXT DELAY
BZ 2480 IF ST=5 OR ST=6 OR ST=7 THEN VALU
    E=VALUE+1
CO 2490 IF ST=9 OR ST=10 OR ST=11 THEN VA
    LUE=VALUE-1
ZV 2500 IF ST=6 OR ST=10 OR ST=14 THEN VA
    LUE=VALUE+16
AR 2510 IF ST=5 OR ST=9 OR ST=13 THEN VAL
    UE=VALUE-16
HX 2520 IF VALUE<0 THEN VALUE=VALUE+256
FD 2530 IF VALUE>255 THEN VALUE=VALUE-256
EM 2540 POKE 708+CC,VALUE:GOTO 2440
ZA 2550 IF  NOT STRIG(0) THEN 2550
ED 2560 COLS(CC)=VALUE:GOTO 2100
VL 2570 REM set completion time
CC 2580 GRAPHICS 0
MJ 2590 POKE 709,14:POKE 710,224
JU 2600 POKE 712,76:POKE 752,1
GH 2610 POKE 764,255
ET 2620 PRINT :PRINT "
    "
NK 2630 PRINT "Set Completion Time"
GV 2640 PRINT "
NC 2650 TIMES(0)=INT(TIME/100)
VM 2660 TIMES(1)=INT((TIME-100*TIMES(0))/
    10)
DZ 2670 TIMES(2)=TIME-100*TIMES(0)-10*TIM
    ES(1)
MZ 2680 PRINT :PRINT "Time ";TIMES(0);TIM
    ES(1);TIMES(2)
WJ 2690 CT=2
LO 2700 IF PEEK(764)<>255 THEN 1200
AX 2710 IF  NOT STRIG(0) THEN 2840
IV 2720 ST=STICK(0)
WH 2730 FOR DELAY=1 TO 5:NEXT DELAY
XE 2740 IF ST=5 OR ST=6 OR ST=7 THEN POSI
    TION 7+CT,5:PRINT TIMES(CT):CT=CT+1
BH 2750 IF ST=9 OR ST=10 OR ST=11 THEN PO
    SITION 7+CT,5:PRINT TIMES(CT):CT=CT-1
AB 2760 IF CT<0 THEN CT=2
AG 2770 IF CT>2 THEN CT=0
TF 2780 IF ST=6 OR ST=10 OR ST=14 THEN TI
    MES(CT)=TIMES(CT)+1
EN 2790 IF ST=5 OR ST=9 OR ST=13 THEN TIM
    ES(CT)=TIMES(CT)-1
VI 2800 IF TIMES(CT)<0 THEN TIMES(CT)=9
QY 2810 IF TIMES(CT)>9 THEN TIMES(CT)=0
YU 2820 POSITION 7+CT,5:PRINT CHR$(TIMES(
    CT)+176)
RF 2830 GOTO 2700
BI 2840 IF  NOT STRIG(0) THEN 2840
DB 2850 TIME=100*TIMES(0)+10*TIMES(1)+TIM
    ES(2):IF TIME<40 THEN TIME=40
OV 2860 GOTO 1200
ZN 2870 REM set heart collection
CI 2880 GRAPHICS 0
MP 2890 POKE 709,14:POKE 710,224
KA 2900 POKE 712,76:POKE 752,1
GN 2910 POKE 764,255
CA 2920 PRINT :PRINT "
    "
PS 2930 PRINT "Set Heart Collection"
OS 2940 PRINT "
LO 2950 HARTS(0)=INT(NUMCOLLECT/10)
QZ 2960 HARTS(1)=NUMCOLLECT-10*HARTS(0)
QI 2970 PRINT :PRINT "Hearts ";HARTS(0);H
    ARTS(1)
SX 2980 CH=1
MT 2990 IF PEEK(764)<>255 THEN 1200
SK 3000 IF  NOT STRIG(0) THEN 3130
IF 3010 ST=STICK(0)
VR 3020 FOR DELAY=1 TO 5:NEXT DELAY
QJ 3030 IF ST=5 OR ST=6 OR ST=7 THEN POSI
    TION 9+CH,5:PRINT HARTS(CH):CH=CH+1
QY 3040 IF ST=9 OR ST=10 OR ST=11 THEN PO
    SITION 9+CH,5:PRINT HARTS(CH):CH=CH-1
KT 3050 IF CH<0 THEN CH=1
LI 3060 IF CH>1 THEN CH=0
CZ 3070 IF ST=6 OR ST=10 OR ST=14 THEN HA
    RTS(CH)=HARTS(CH)+1
PF 3080 IF ST=5 OR ST=9 OR ST=13 THEN HAR
    TS(CH)=HARTS(CH)-1
CU 3090 IF HARTS(CH)<0 THEN HARTS(CH)=9
XI 3100 IF HARTS(CH)>9 THEN HARTS(CH)=0
AJ 3110 POSITION 9+CH,5:PRINT CHR$(HARTS(
    CH)+176)
WA 3120 GOTO 2990
SV 3130 IF  NOT STRIG(0) THEN 3130
RX 3140 NUMCOLLECT=10*HARTS(0)+HARTS(1):I
    F NUMCOLLECT=0 THEN NUMCOLLECT=1
```

```
OF 3150 GOTO 1200
AG 3160 REM menu three options
XL 3170 ON OPT+1 GOTO 3180,3410,3950
LF 3180 REM clear screen
BY 3190 GRAPHICS 0
LA 3200 POKE 709,12:POKE 710,144
HG 3210 POKE 712,110:POKE 752,1
GD 3220 POKE 764,255
AO 3230 PRINT :PRINT "┌──────────────┐"
XC 3240 PRINT "│Clear Screen│"
SI 3250 PRINT "└──────────────┘"
PV 3260 PRINT :PRINT "Are you sure? "
BS 3270 WIPE=0
JF 3280 POSITION 16,5
FV 3290 IF WIPE THEN PRINT "yes":GOTO 3310
VP 3300 PRINT "no "
LK 3310 IF PEEK(764)<>255 THEN 1200
ZS 3320 IF  NOT STRIG(0) THEN 3370
BG 3330 ST=STICK(0):IF ST=15 THEN 3310
CY 3340 WIPE= NOT WIPE
EI 3350 IF STICK(0)<>15 THEN 3350
TI 3360 GOTO 3280
AH 3370 IF  NOT STRIG(0) THEN 3370
SF 3380 IF WIPE THEN GRAPHICS 0:POKE 559,0:RUN
OV 3390 GOTO 1200
GH 3400 REM load screen
BG 3410 GRAPHICS 0
LK 3420 POKE 709,12:POKE 710,144
WU 3430 POKE 712,110
GN 3440 POKE 764,255
WV 3450 PRINT :PRINT "┌──────────────┐"
ZY 3460 PRINT "│Load Screen│"
AL 3470 PRINT "└──────────────┘":PRINT
DX 3480 PRINT "Please specify the [Dn]:<FILENAME>"
EE 3490 PRINT "from which the screen will be loaded."
UX 3500 TRAP 3500:POSITION 0,8
BC 3510 PRINT CHR$(156);"Filename ";
TU 3520 INPUT FN$
YH 3530 IF FN$="" THEN POKE 752,1:GOTO 1200
FP 3540 IF FN$(1,1)<>"D" THEN 3500
VP 3550 TRAP 3860:OPEN #1,4,0,FN$:POKE 752,1:PRINT
IT 3560 TRAP 3880:FOR COL=0 TO 4:GET #1,VAL
JB 3570 COLS(COL)=VAL:NEXT COL
HY 3580 GET #1,STARTXPOS:GET #1,STARTYPOS
YQ 3590 GET #1,DUMMY:GET #1,DUMMY
UB 3600 GET #1,D1:D1=D1-204
WD 3610 GET #1,D2:D2=D2-204
VY 3620 NUMCOLLECT=10*D1+D2
XY 3630 GET #1,T1:T1=T1-204
AA 3640 GET #1,T2:T2=T2-204
CC 3650 GET #1,T3:T3=T3-204
GH 3660 TIME=100*T1+10*T2+T3
VO 3670 GET #1,LO:GET #1,HI
CQ 3680 EXITOFFS=LO+256*HI-7168
LQ 3690 EXITYPOS=INT(EXITOFFS/40)
DG 3700 EXITXPOS=EXITOFFS-40*EXITYPOS
HM 3710 GET #1,NUMBER
TU 3720 FOR I=0 TO NUMBER
YC 3730 GET #1,DUMMY:GET #1,DUMMY
PZ 3740 GET #1,DUMMY:NEXT I
PP 3750 BASE=LO2+256*HI2:NUMHEARTS=0:NUMBOULDERS=0
BW 3760 FOR I=0 TO 959
TA 3770 GET #1,TYPE
HU 3780 IF TYPE=0 OR TYPE=196 THEN POKE BASE+I,SPACE-32
JM 3790 IF TYPE=1 THEN POKE BASE+I,LAND-32
GZ 3800 IF TYPE=134 THEN POKE BASE+I,WALL-32
AZ 3810 IF TYPE=197 THEN POKE BASE+I,EDGE-32
UG 3820 IF TYPE=66 THEN POKE BASE+I,HEART-32:NUMHEARTS=NUMHEARTS+1
LG 3830 IF TYPE=131 THEN POKE BASE+I,BOULDER-32:NUMBOULDERS=NUMBOULDERS+1
FT 3840 NEXT I
JQ 3850 TRAP 1200:CLOSE #1:GOTO 1200
VX 3860 TRAP 3870:CLOSE #1
RF 3870 GOTO 3500
XD 3880 TRAP 3890:CLOSE #1
CF 3890 PRINT CHR$(253);"Error I/O error loading screen"
XM 3900 PRINT :PRINT "-press trigger-"
YE 3910 IF STRIG(0) THEN 3910
BC 3920 IF  NOT STRIG(0) THEN 3920
OP 3930 GOTO 1200
OC 3940 REM save screen
CC 3950 GRAPHICS 0
MG 3960 POKE 709,12:POKE 710,144
XO 3970 POKE 712,110
HJ 3980 POKE 764,255
XR 3990 PRINT :PRINT "┌──────────────┐"
IG 4000 PRINT "│Save Screen│"
ZM 4010 PRINT "└──────────────┘":PRINT
VK 4020 IF NUMHEARTS>=NUMCOLLECT THEN 4080
FR 4030 POKE 752,1:PRINT CHR$(253);"Error Not enough hearts on screen."
XH 4040 PRINT :PRINT "-press trigger-"
UK 4050 IF STRIG(0) THEN 4050
WO 4060 IF  NOT STRIG(0) THEN 4060
OK 4070 GOTO 1200
DQ 4080 PRINT "Please specify the [Dn]:<FILENAME>"
WE 4090 PRINT "to which the screen should be saved."
TF 4100 TRAP 4100:POSITION 0,8
AV 4110 PRINT CHR$(156);"Filename ";
TN 4120 INPUT FN$
YA 4130 IF FN$="" THEN POKE 752,1:GOTO 1200
BY 4140 IF FN$(1,1)<>"D" THEN 4100
AG 4150 TRAP 4520:OPEN #1,8,0,FN$
DF 4160 POKE 752,1:PRINT
PM 4170 TRAP 4590:FOR COL=0 TO 4
MY 4180 PUT #1,COLS(COL):NEXT COL
LM 4190 PUT #1,STARTXPOS
LF 4200 PUT #1,STARTYPOS
SH 4210 ADDR=7168+40*STARTYPOS+STARTXPOS
DL 4220 GOSUB 4550
GR 4230 D1=INT(NUMCOLLECT/10)
MM 4240 D2=NUMCOLLECT-10*D1
BF 4250 PUT #1,204+D1:PUT #1,204+D2
EF 4260 T1=INT(TIME/100)
IY 4270 T2=INT((TIME-100*T1)/10)
CL 4280 T3=TIME-100*T1-10*T2
FF 4290 PUT #1,204+T1:PUT #1,204+T2
RI 4300 PUT #1,204+T3
VP 4310 ADDR=7168+40*EXITYPOS+EXITXPOS
DN 4320 GOSUB 4550
XJ 4330 PUT #1,NUMHEARTS+NUMBOULDERS-1
CW 4340 BASE=LO2+256*HI2
BM 4350 FOR I=0 TO 959
BP 4360 TYPE=PEEK(BASE+I)+32
ON 4370 IF TYPE=HEART THEN PUT #1,1:ADDR=7167+I:GOSUB 4550
PH 4380 IF TYPE=BOULDER THEN PUT #1,2:ADDR=7167+I:GOSUB 4550
FZ 4390 NEXT I
ER 4400 STARTLOC=40*STARTYPOS+STARTXPOS
BC 4410 FOR I=0 TO 959
UY 4420 IF I=STARTLOC THEN PUT #1,196:GOTO 4500
BI 4430 TYPE=PEEK(BASE+I)+32
YV 4440 IF TYPE=SPACE THEN PUT #1,0
UX 4450 IF TYPE=LAND THEN PUT #1,1
DS 4460 IF TYPE=WALL THEN PUT #1,134
ZK 4470 IF TYPE=EDGE THEN PUT #1,197
FD 4480 IF TYPE=HEART THEN PUT #1,66
JW 4490 IF TYPE=BOULDER THEN PUT #1,131
FC 4500 NEXT I
IZ 4510 TRAP 1200:CLOSE #1:GOTO 1200
SH 4520 TRAP 4530:CLOSE #1
PD 4530 GOTO 4100
DK 4540 REM put address to file
HP 4550 HI=INT(ADDR/256)
AP 4560 LO=ADDR-256*HI
RX 4570 PUT #1,LO:PUT #1,HI
BK 4580 RETURN
SB 4590 TRAP 4600:CLOSE #1
EF 4600 PRINT CHR$(253);"Error I/O error saving screen"
XK 4610 PRINT :PRINT "-press trigger-"
XE 4620 IF STRIG(0) THEN 4620
ZX 4630 IF  NOT STRIG(0) THEN 4630
ON 4640 GOTO 1200
BX 4650 GRAPHICS 0
KZ 4660 POKE 709,14:POKE 710,160
JA 4670 POKE 712,28:POKE 752,1
HE 4680 POKE 764,255
ZB 4690 PRINT CHR$(125);CHR$(253)
MC 4700 PRINT "┌──────────────┐"
YZ 4710 PRINT "│SETTING ERROR│"
HG 4720 PRINT "└──────────────┘ ":PRINT :PRINT
BR 4730 ON ERR GOSUB 4780,4790,4800,4810
FS 4740 PRINT :PRINT :PRINT "-press trigger-"
BK 4750 IF STRIG(0) THEN 4750
EX 4760 IF  NOT STRIG(0) THEN 4760
VE 4770 GOTO 1960
NZ 4780 PRINT "Error Start position outside of":PRINT "       first screen bounds.":RETURN
IX 4790 PRINT "Error Illegal start position on edge":PRINT "       of screen.":RETURN
BN 4800 PRINT "Error Start positioned over wall,":PRINT "       edge, heart or boulder.":RETURN
TB 4810 PRINT "Error Exit positioned over heart or":PRINT "       boulder.":RETURN
LI 4820 REM select positions
AI 4830 POKE LMSLO,LO2:POKE LMSHI,HI2
PI 4840 POKE 88,LO2:POKE 89,HI2
CH 4850 POKE 709,14:POKE 710,0
JX 4860 POKE 712,138:POKE 756,CHSET
NP 4870 POKE 764,255:ABORT=0
UA 4880 IF PEEK(764)<>255 THEN ABORT=1:RETURN
UX 4890 LOCATE XPOS,YPOS,OLDCHAR
RM 4900 PX=XPOS:PY=YPOS
RB 4910 PC=CURSOR:GOSUB 5100
AT 4920 OLDXPOS=XPOS:OLDYPOS=YPOS
XZ 4930 IF  NOT STRIG(0) THEN 5060
JH 4940 ST=STICK(0)
SV 4950 IF ST=5 OR ST=6 OR ST=7 THEN XPOS=XPOS+1
LK 4960 IF ST=9 OR ST=10 OR ST=11 THEN XPOS=XPOS-1
OQ 4970 IF ST=6 OR ST=10 OR ST=14 THEN YPOS=YPOS-1
QG 4980 IF ST=5 OR ST=9 OR ST=13 THEN YPOS=YPOS+1
PG 4990 PX=OLDXPOS:PY=OLDYPOS
TX 5000 PC=OLDCHAR:GOSUB 5090
CI 5010 IF XPOS>39 THEN XPOS=0
YD 5020 IF XPOS<0 THEN XPOS=39
ZT 5030 IF YPOS>23 THEN YPOS=0
SH 5040 IF YPOS<0 THEN YPOS=23
WG 5050 GOTO 4880
MW 5060 PC=OLDCHAR:GOSUB 5100
YY 5070 IF  NOT STRIG(0) THEN 5070
BB 5080 RETURN
SH 5090 REM plot character on design
QY 5100 POKE LO2+256*HI2+40*PY+PX,PC-32
AI 5110 RETURN
BD 5120 REM select a option
XU 5130 POKE LMSLO,LO1:POKE LMSHI,HI1
WD 5140 POKE 88,LO1:POKE 89,HI1
OA 5150 POKE 709,14:POKE 710,208
ZY 5160 POKE 712,202:POKE 756,224
UH 5170 IF  NOT STRIG(0) THEN 5300
JN 5180 ST=STICK(0):IF ST=15 THEN 5170
DN 5190 GOSUB 5710
IO 5200 IF ST=5 OR ST=6 OR ST=7 THEN MENU=MENU+1
XZ 5210 IF ST=9 OR ST=10 OR ST=11 THEN MENU=MENU-1
WW 5220 IF ST=6 OR ST=10 OR ST=14 THEN OPT=OPT-1
DK 5230 IF ST=5 OR ST=9 OR ST=13 THEN OPT=OPT+1
RO 5240 IF MENU<0 THEN MENU=2
RT 5250 IF MENU>2 THEN MENU=0
AR 5260 IF OPT<0 THEN OPT=3*(MENU=0)+2*(MENU=1)+2
RX 5270 IF (MENU=0 AND OPT>5) OR (MENU=1 AND OPT>4) OR (MENU=2 AND OPT>2) THEN
```

→

```
   OPT=0
DM 5280 GOSUB 5710
TO 5290 GOTO 5170
TQ 5300 IF  NOT STRIG(0) THEN 5300
AM 5310 RETURN
MF 5320 REM initialise design screen
GI 5330 POKE 106,DISP2
SR 5340 GRAPHICS 0:POKE 559,0
DH 5350 POKE 752,1:PRINT
MV 5360 COLOR EDGE:PLOT 0,0
PN 5370 DRAWTO 39,0:DRAWTO 39,23
TZ 5380 DRAWTO 0,23:DRAWTO 0,0
WA 5390 NUMHEARTS=0:NUMBOULDERS=0
ZA 5400 STARTXPOS=1:STARTYPOS=1
OE 5410 EXITXPOS=2:EXITYPOS=2
MZ 5420 NUMCOLLECT=1:TIME=100
HJ 5430 XPOS=1:YPOS=1
IU 5440 LO2=PEEK(88):HI2=PEEK(89)
AB 5450 CC=0:RESTORE 5480
SE 5460 FOR COL=0 TO 4:READ VALUE
AO 5470 COLS(COL)=VALUE:NEXT COL:RETURN
ZW 5480 DATA 22,54,10,220,0
ON 5490 REM initialise options screen
FK 5500 POKE 106,DISP1
SM 5510 GRAPHICS 0:POKE 559,0
DC 5520 POKE 752,1:PRINT
MJ 5530 PRINT "┌═══════════════════════════════════┐"
AD 5540 PRINT "|   Munchy Madness Screen Designer   |"
OI 5550 PRINT "|     Version 2.0 By Paul Lay 1987   |"
NN 5560 PRINT "└═══════════════════════════════════┘"
NB 5570 PRINT :PRINT "┌══════════┐ ┌══════════┐ ┌══════════┐"
NX 5580 PRINT "|Draw      | |Set       | |Screen    |"
HP 5590 PRINT "|══════════| |══════════| |══════════|"
RF 5600 PRINT "|Space     | |Start     | |Clear     |"
FA 5610 PRINT "|Land      | |Exit      | |Load      |"
PY 5620 PRINT "|Wall      | |Colours   | |Save      |"
OC 5630 PRINT "|Edge      | |Time      | └══════════┘"
DD 5640 PRINT "|Heart     | |Number    |"
YJ 5650 PRINT "|Boulder   | └══════════┘"
RI 5660 PRINT "└══════════┘"
LO 5670 MENU=0:OPT=0:GOSUB 5700
IH 5680 LO1=PEEK(88):HI1=PEEK(89)
BQ 5690 RETURN
OZ 5700 REM highlight option
GN 5710 START=3+10*MENU:FINISH=6+START
PZ 5720 Y=9+OPT
FI 5730 FOR X=START TO FINISH
YZ 5740 LOCATE X,Y,Z
RO 5750 Z=Z+128*(Z<128)-128*(Z>=128)
NU 5760 COLOR Z:PLOT X,Y
NT 5770 NEXT X:RETURN
OV 5780 REM new character data
YA 5790 DATA 186,102,91,173,87,181,221,42
DF 5800 DATA 0,102,255,255,126,60,24,0
FJ 5810 DATA 28,126,247,187,191,223,126,56
CX 5820 DATA 24,24,24,231,231,24,24,24
RI 5830 DATA 251,159,191,249,251,159,191,249
RJ 5840 DATA 221,0,119,0,221,0,119,0
YR 5850 REM copy new characters
FD 5860 RESTORE 5790:CHSET=256*CHSET
CH 5870 FOR I=1 TO 6:FOR J=0 TO 7:READ K
FZ 5880 POKE CHSET+8*I+J,K
LS 5890 NEXT J:NEXT I:CHSET=CHSET/256
AV 5900 RETURN
ZC 5910 REM equate labels
VL 5920 SPACE=32:LAND=33:HEART=34
HV 5930 BOULDER=35:CURSOR=36:EDGE=37
CD 5940 WALL=38
BK 5950 RETURN
QM 5960 REM array variables
ZI 5970 DIM COLS(5),TIMES(3),COLLECTS(2)
RE 5980 DIM HARTS(2),FN$(15)
BW 5990 RETURN
```

```
EH 0 REM ******************************
AN 1 REM *        MUNCHY MADNESS       *
AT 2 REM *        JOINER PROGRAM       *
TO 3 REM *    Links new screens to     *
NS 4 REM *       Munchy Madness        *
DP 5 REM *             -               *
RH 6 REM *      by Paul Lay, 1987      *
MR 7 REM * --------------------------- *
JB 8 REM *  PAGE 6 MAGAZINE - ENGLAND  *
EQ 9 REM ******************************
BP 10 REM new filename
CR 12 DATA D:NEW.OBJ
XB 20 REM old filename
WW 22 DATA D:OLD.OBJ
LX 30 REM screen 1
FM 32 DATA D:SCREEN1.MMS
MN 40 REM screen 2
GE 42 DATA D:SCREEN2.MMS
ND 50 REM screen 3
GW 52 DATA D:SCREEN3.MMS
NT 60 REM screen 4
HO 62 DATA D:SCREEN4.MMS
CX 70 DIM FN$(15)
SB 80 READ FN$
NO 90 OPEN #1,8,0,FN$
CW 100 PUT #1,255:PUT #1,255
GL 110 PUT #1,0:PUT #1,32
HZ 120 PUT #1,41:PUT #1,47
SA 130 READ FN$
ZD 140 OPEN #2,4,0,FN$
ON 150 FOR I=1 TO 6
KP 160 GET #2,DUMMY:NEXT I
ZD 170 ADDR=24576:BYTES=3874
WU 180 GOSUB 1100:GOSUB 1000
OI 190 PUT #1,0:PUT #1,0
NR 200 PUT #1,0:PUT #1,0
OL 210 PUT #1,112:PUT #1,120
AY 220 PUT #1,128:PUT #1,136
LQ 230 CLOSE #2
BA 240 HIADDR=112:BYTES=2048
NI 250 FOR I=1 TO 4
HZ 260 TRAP 330:READ FN$
CA 270 TRAP 320:OPEN #2,4,0,FN$
ZC 280 PUT #1,0:PUT #1,HIADDR
BK 290 PUT #1,255:PUT #1,HIADDR+7
WG 300 GOSUB 1100:GOSUB 1000
II 310 HIADDR=HIADDR+8
YE 320 TRAP 330:CLOSE #2
FZ 330 NEXT I
FI 340 PUT #1,224:PUT #1,2
FY 350 PUT #1,225:PUT #1,2
BR 360 PUT #1,208:PUT #1,32
IN 370 CLOSE #1:END
TC 1000 REM write bytes to #1
SB 1010 POKE 850,11
GT 1020 HI=INT(ADDR/256)
ZT 1030 LO=ADDR-256*HI
NW 1040 POKE 852,LO:POKE 853,HI
FV 1050 HI=INT(BYTES/256)
NT 1060 LO=BYTES-256*HI
UB 1070 POKE 856,LO:POKE 857,HI
ZC 1080 L=USR(ADR("h▪▪LV▪"))
BA 1090 RETURN
HT 1100 REM read bytes from #2
UX 1110 POKE 866,7
GV 1120 HI=INT(ADDR/256)
ZV 1130 LO=ADDR-256*HI
YC 1140 POKE 868,LO:POKE 869,HI
FX 1150 HI=INT(BYTES/256)
NV 1160 LO=BYTES-256*HI
RB 1170 POKE 872,LO:POKE 873,HI
KW 1180 L=USR(ADR("h▪ LV▪"))
BC 1190 RETURN
```



WANTED

ARTICLES

More, well written, in depth, articles on all aspects of Atari programming are required especially longer articles that may be published in two or more issues. Almost anything considered unless it has been covered recently, check with us first.

PROGRAMS

Believe it or not we are running very short of good games programs! There must be many more out there, send them in! All other types of program also needed from utilities to home business to programming techniques.

REVIEWERS

A few regular reviewers are needed generally and especially specialist reviewers for the ST. If you feel you can review specialist programs like music or business programs let us know. If you can review particular types of games for the 8 bit *in depth* let us know. We want to set up a small panel of reviewers to be able to cover all the different types of software we receive for review.

We will pay for all contributions published at the rates current at the time of publication. That may help you enjoy your hobby even more!

EDITORIAL ASSISTANT

We will shortly require an Editorial Assistant to help with all aspects of producing PAGE 6 including evaluating readers contributions, writing reviews, researching articles, putting disk collections together etc. This will be a full time position suitable for a young Atari enthusiast.

You must – be totally enthusiastic about, and committed to, Atari 8-bit computers; be excited by, and willing to learn about, the ST; be able to use a word processor effectively; have a good command of English and grammar; know Atari Basic inside out; be willing to work late when necessary; be quick to learn; be meticulous in your work – and more!

Experience in producing a newsletter might help but enthusiasm and ability combined is the key.

If you are interested please write with full details of yourself (age, qualifications, experience, interests etc.) and enclose a sample of your writing skill such as a review or short article. We can then discuss the matter further.

Please write to me personally (Les Ellingham) at P.O. BOX 54, STAFFORD, ST16 1DR

TITLE SCREEN CONTEST WINNERS

From the amazingly small number of entries (I thought Atari owners were proud of writing programs?) the following winners were selected.

FIRST PRIZE of £75 and a Disk Subscription goes to D. Stuart of Maidstone whose program is on this month's disk.

SECOND PRIZE of £25 and a Disk Subscription went to Robert Gibbons for a super spinning disk which you will see on an Issue disk later.

THIRD PRIZE of £25 and a Disk Subscription went to Stephen Bloxley for a program that would have been ideal but used music from POKEY PLAYER which is, unfortunately, copyrighted elsewhere.

Finally, an honourable mention must be given to Steve Pedler who may have been among the prizewinners for a faithfully reproduced copy of our logo. Unfortunately for him we changed the logo from the last issue!

Thanks also to J.F. Howarth, Allan Palmer and Allan Pickett who submitted the only other entries!

TUTORIAL SUBROUTINES

Start of a new series in which Ian Finlayson presents short subroutines which are highly documented to allow you to understand exactly what is going on.

1. WHOLE DISK CONTENTS

There are many programs around which will list the contents of your disk to the screen or to a printer, but all of them have a common disadvantage – if you have a very large number of files per disk you have to scan several pages of disk contents and watch the list scroll away or print it out as hard copy. This situation can easily arise if you write many short letters using a word processor making it difficult to keep track of all your correspondence. I find AtariWriter very frustrating in this respect as the list of files scrolls rapidly and the 'Control 1' interrupt does not freeze it. Printing out the contents results in a long narrow list of the filenames which is not ideal for retaining with the disk.

Here then is a short program which will list 64 file names to a single screen – that is as many as are possible under DOS 2 although some other forms of DOS can accommodate more. The program is intended to provide a tutorial and to provide a useful subroutine at the same time. It can be readily modified for other purposes and will give a neat printout if you change all the ? commands to LP.

PROGRAM BREAKDOWN

Here then is a full breakdown of the program which I hope will help you understand and use the techniques in your own programs.

Line 30999 – This REM statement is merely an identifier. I find such reminders most important when keeping small bits of program or subroutine for later use, otherwise things get lost. By putting it on line 30999 I can delete it, to save memory if required, when incorporating it into a larger program and still GOSUB to a round line number.

Line 31000 – Dimensions the string TT1A$. For use in subroutines it is as well to avoid the more common names for strings or variables as they can clash with the main program. The disk directory files we are going to recover are of the form "* FILENAMEEXT XXX" – 17 characters each. The * shows locked or unlocked, then there is a space followed by the filename and extender (without a stop between them),a second space and then the number of sectors the file occupies.

Next we open IOCB #3 to the disk directory (as signified by the 6 in the open command. Using the two * wild cards in the "D:*.*" name will access all the filenames on the disk. This can be changed to suit your needs, for instance if you only wish to list picture files from a disk you could use "D:*.PIC" and any file without the PIC extender will be ignored (such as DOS.SYS for example).

The first print statement clears the screen and puts a heading in the top line. The technique is not difficult to use and is very much the same as cursor movements around the screen except that to stop them taking effect immediately each

```
XT 30999 REM **         PAGE 6          **
             **  SUBROUTINE TUTORIAL  **
             **     DISK CONTENTS       **
AU 31000 DIM TT1$(17):OPEN #3,6,0,"D:*.*"
   :? "↰▸▸▸** DISK CONTENTS **":TT1=1:POK
   E 752,1
RE 31010 FOR TT2=0 TO 2:INPUT #3,TT1$:IF
   TT1$(4,8)=" FREE" THEN 31030
NA 31020 POSITION TT2*13,TT1:? TT1$(2,10)
   ;".";TT1$(11,13):NEXT TT2:TT1=TT1+1:GO
   TO 31010
XT 31030 ? "▸PRESS ANY KEY TO CONTINUE";:
   CLOSE #3:OPEN #3,4,0,"K:":GET #3,TT2
IP 31040 CLOSE #3:POKE 752,0:END
```

Control key sequence is prefixed by Escape. In this instance the first three characters in the quotation marks are obtained as follows:

Esc Ctrl-Clear	(Clear screen)
Esc Ctrl-Tab	(Tab right)
Esc Ctrl-Rt.arrow	(Cursor right one space)

Next we initialise the variable TT1 to 1 – This is the line we wish to print directory information on. (The title is on line zero). It would be nice to leave a blank line between the title and file listing but with a possible 64 files to list and only enough width for 3 on a line we could need 21 lines, so there are none to spare in a 24 line Graphics 0 screen.

Last a non-zero poke to 752 turns the cursor off.

Line 31010 – TT2 is the column in which the file name will go (0 to 2). INPUT gets a string from the open IOCB #3. Next we check to see if we have reached the end of the disk contents. The last string recovered from the directory is of the form "XXX FREE SECTORS", and we look for a match with " FREE".

Line 31020 – Positions the (invisible) cursor. Each column is 13 characters wide including a trailing space in the form "FILENAME.EXT ".I have split the FILENAMEEXT with a period for clarity. Once the filename is displayed we go back to the next of the 3 columns and when all three are done move down a row before printing the next 3 file names.

Line 31030 – This is the bottom line of the display, printed after finding the free sector count in line 31010. The ; at the end of the print statement is important as it stops the cursor from moving to the next line which would cause the screen to scroll up if you have a full 64 files present.

Next we set up to receive an input from the keyboard. The GET waits for a keypress, the variable is a dummy for which I have reused TT2 for economy as we don't need it any more.

Line 31040 – After the keypress close the IOCB, turn the cursor back on and clear the screen, this is good housekeeping. When this is used as a subroutine the Return Statement goes here also. •



[redacted]

GREAT BRITAIN LTD (ISSUE 27): Apologies to 400/800 owners, the program will not run as listed as it uses the International Character Set found only in the XL/XE range. The fix is simple, just change the POKE in line 1060 from POKE 756,204 to POKE 756,224. Instead of the £ sign you will get CONTROL-H symbols throughout but this does not detract from the game. You could, if you wished, replace all CONTROL-H's throughout the listings with $ (or whatever) but there are a lot of them!

SIERPINSKI CURVES (ISSUE 27): Thanks to Bill Kidston for a couple of updates to this program. Another level of detail can be added by increasing lines 15 and 50 by 1 viz:

```
RT 15 DIM ST(6):F=0
KF 50 FOR Z=1 TO 5
```

Yet another level can be added using Graphics 8 by amending as follows.

```
SE 15 DIM ST(7):F=0
SU 45 GRAPHICS 8+16:SETCOLOR 0,3,8
KU 50 FOR Z=1 TO 6
ZJ 56 COLOR 1
```

Line 55 should be deleted.

SOLID MODELLING (ISSUE 26): Andre Kosmos from the Netherlands sent in a small amendment to the INTRO program to make it automatically run the main program. Just add the following line and run D:INTRO.3D as usual.

```
JJ 95 ? "RUN";CHR$(34);"D:PROGRAM.3D";CH
   R$(34);"■";:POKE 764,12
```

You can also of course use SETUP.COM from DOS 2.5 to make an AUTORUN.SYS for the INTRO program and make a full autoboot disk.

SMARTSHEET (ISSUE 27): The fix in the letters page of issue 27 is wrong (our fault). Many thanks to Mr Charles for reading his own letter(!) and Bill Kidston who pointed out that the line needs to be split in two otherwise the second statement might never be processed. The correct (we hope!) fix is as follows

```
DV 1270 L=8-LEN(A$):IF L<0 THEN L=0
KC 1271 OUT$(CP,CP+L)=CL$:OUT$(CP+L,CP+7)
   =A$:RETURN
```

Thanks also to Mike Sapsard who pointed out that there is an error in the SUM function which can be fixed by amending line 1410. The statement in that line FOR Z=A-1 TO F should read FOR Z=A-1 TO F-1.

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By: R. Constan · 1985

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MINI OFFICE II
Database Publications
48k disk
£19.95

Reviewed by Allan J. Palmer

For the last year or so I have had the use of an ICL 'One Per Desk' (OPD) desktop microcomputer at work. The OPD has supplied with it, on ROM, a package of software called 'XChange' by Psion. 'XChange' consists of four integrated utilities: Quill (word processor), Abacus (spreadsheet), Archive (database) and Easel (graphing). It is a very useful tool. Now, believe it or not, users of 48k 8-bit Ataris with a disk drive can have the equivalent. Database Publications have (at last) produced an Atari 8-bit version of their successful MINI OFFICE II, already available on Amstrad, BBC and Commodore.

If you have been trying to decide whether to spend anywhere between thirty and fifty pounds on either a word processor, spreadsheet or database, you can now obtain all three plus more for under twenty pounds!

THE PACKAGE

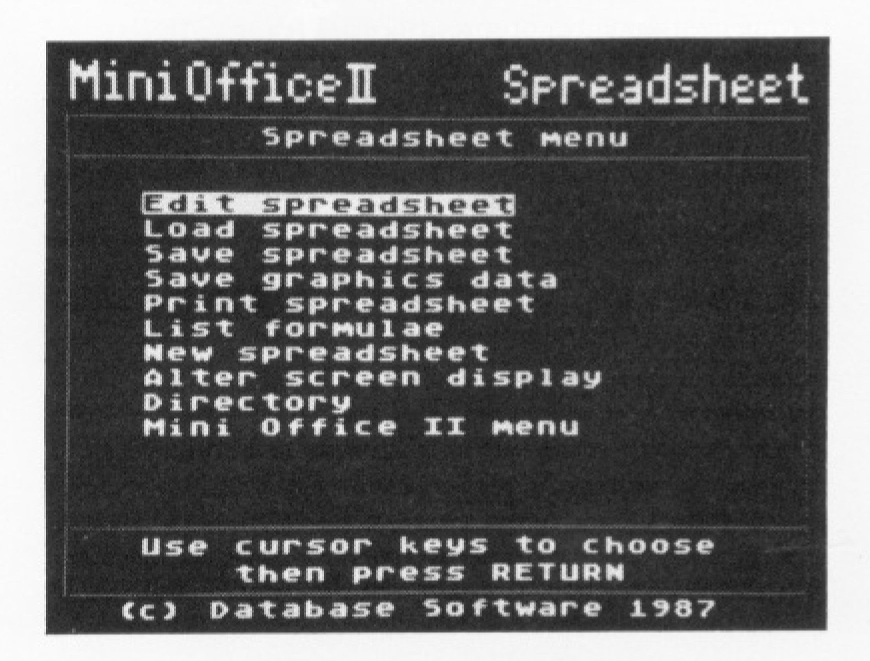
MINI OFFICE II is supplied on a double-sided disk in a sturdy box with a detailed 80-page, spiral bound manual and consists of six modules: Word Processor; Spreadsheet; Database; Graphics; Label Printer and Communications.

These are displayed as a menu when the disk is first booted, and selecting one of the options takes you down to an individual menu for the chosen module. The use of sub-menus within each module is maintained to provide ease of use and assimilation. The text appears in a Roman style font in white on a black background.

WORD PROCESSOR

MINI OFFICE II includes a full-featured word processor which provides just about all the facilities that most users could want. In Edit mode, the screen header displays the elapsed time since you started entering text, the number of words entered, the amount of free memory and whether you are in Insert or Overwrite mode. There are comprehensive commands to move through your text document, to delete characters, words or lines, and to manipulate blocks of text (deleting, copying, moving, totalling the words in the block, wholly changing the block to either upper or lower case). In addition, there are facilities to automatically number each page, display the typing speed in words per minute on the screen header, use 'hard' spaces, and more.

There is a preview mode using a software generated 80-column mode which produces multi-coloured characters that are just about readable. The scrolling speed of the preview can be adjusted. Page formatting commands are available in the Print mode (in addition to being available as embedded commands within the text) including single-sheet printing, justification, setting up of print control characters, page length, margins, and the positioning of headers and



footers. Individual text files may be chained to create a larger document. This word processor can be used with the ATARI 1029 printer (is this a first?) and Epson compatibles.

A very flexible Mail Merge facility is also included and this integrates with the Database module of the package. Documents may be saved to and loaded from disk. The word processor and all modules support more than one drive, and on the 130XE, this includes the RAMdisk. My main criticism is that it does not appear to have the facility to use a pre-defined driver file for features such as underline, italic, condensed print, etc. In order to accomplish these functions, you have to use the 'Set Print Code Strings' option of the Print Text menu to set the control codes particular to your printer and assign them to Control+number combinations. These codes would have to be input at each session with the word processor, something which obviously needs remembering each time you use the package. Perhaps I am spoilt after using PaperClip, but I feel that I would not use the Mini Office II word processor for extensive document writing.

SPREADSHEET

Like the word processor, this module is also very comprehensive. The default spreadsheet set up is 15 columns by 20 rows, but use of the Insert command when in Edit mode allows for additional columns and rows to be added to your spreadsheet up to the limit of available memory. Unfortunately, however, the manual does not give an indication of these limits or clearly explain the method of editing in additional rows and columns. Text and numerics are easily enterable, together with complex formulas into each cell of the spreadsheet array. The formulas may include such arithmetic functions as COS(n), LOG(n) and SQR(n). Facilities are provided to modify individual cells and to make global changes to the entire spreadsheet – changing column widths, number of decimal places, justification and more. If you have used a simple spreadsheet, such as 'SmartSheet' from PAGE 6 issue 22, you will be impressed at what can be done here in MINI OFFICE II. Options are provided to control the printing of the whole or part of the spreadsheet, with provision for the inclusion of printer control codes. Naturally, disk saving and loading are catered for. Spreadsheet data may also be saved in a form compatible with the Graphics

module in order that the data may be displayed as a graph. Having used a number of spreadsheets, I felt the MINI OFFICE II version was very adequate with the only missing facility being the ability to do block moves/duplication of cells, in addition to the supplied single cell duplication.

DATABASE

The Database module allows you to create and maintain files of information which you may then manipulate in whatever manner you desire. I found the documentation for this section very clear, taking you step by step through the definition of a database file structure and the creation of the database to entering and editing of data, followed by descriptions of the other functions including disk utilities, printing, searching, and sorting. A database record may be defined with up to 20 fields and each field may be either Alpha (i.e. text), Decimal, Integer, Date (in DD/MM/YY format), or Formula. This last option gives the powerful facility of calculating one record field from the contents of others. Editing records is very straightforward, and there is the facility to mark individual records which then allows you to create a sub-database for separate manipulation. Whilst in the edit mode, individual records can be printed directly.

The utilities function includes 4 important features: a copy option to create a back-up of your database files, a copy of marked records to create sub-files, a facility to extend the size of the database from the initial maximum set at file creation up to the limit of available space on disk, and a program to merge databases.

The Print menu is very comprehensive, allowing for the printing of all or marked records, selecting particular fields or parts of fields to be printed, printing the selected fields from each record in either horizontal or vertical format, with or without field titles. Provision is also allowed for printer control in terms of page length and printer codes.

The Search option is equally impressive allowing for searching all or only marked records, with the search operators including all combinations of =, < and > and provision for the use of wild cards. One other menu option to be noted is the ability to total a given field in all or selected records, or to alter the values in a field throughout the (marked) records. To give wider variety to the type of report produced, the Mail Merge facility of the word processor may be used to read Database files and generate comprehensive record listings, opening up the possibility of invoices, receipts, etc. Similarly, the Label Printer module can use Database files to generate labels. One of the obvious applications here for users will undoubtedly be a custom designed disk cataloguing system. No complaints on this module.

GRAPHICS

I feel the name Graphics is a slight misnomer for this module of the Mini Office II package. More strictly, this is a graphing module. Essentially, you have the option of producing vertical bar graphs, line graphs, or pie charts from data that you either enter directly or load in from files produced by the Spreadsheet module. I found this module to be very impressive, and whilst not incorporating some of the more esoteric statistical functions of B/Graph, it certainly would satisfy the needs of the majority of users.

The pie chart offers the ability to explode one or more segments of the pie for greater effect. The bar graph can be drawn either flat or in 3D. Having produced the desired graph, text can be placed where desired on the screen. Graph screens can be saved to disk for subsequent use in this module, or for use within other programs. The module also supports Atari 1029 and Epson printer dumps, and allows for graphs to be saved on disk in a format suitable for loading into the word processor files giving the ability to generate documents containing graph data. A very neat and comprehensive module.

LABEL PRINTER

This module is capable of accepting data from the keyboard or from Database files and allows you to design the format of label desired. Editing options provide for the specification of number of labels across the page and label depth. Using database files, specific fields or parts of fields can be printed in the desired positions on a label template. As in other modules, printer codes can be incorporated to utilise facilities such as bold-faced text, italics, etc. A nice compact and usable feature of the package.

COMMUNICATIONS

The Communications module provides an answer for those who found ViewTerm from Miracle Technology somewhat lacking. I am only a novice in the communications field, but I was soon able to get to grips with this module. Using the menu/sub-menu style of the other modules you are able to define your communications protocol. (MicroLink/Telecom Gold 300 and 1200 baud protocols are built in and a customised option is available). One important feature I found was the easy to change Filter mode, enabling you to switch between ASCII and ATASCII mode with a simple key-stroke combination. If you have ever used the CBABBS bulletin board, for example, you'll find the benefits in the use of ATASCII. There is a Auto-Print mode enabling all text received to be sent directly to your printer and this, again, is a feature which can be simply toggled on or off.

The module is designed to operate with a serial modem connected to port one of an 850 interface or with Miracle Technology's DataTari cable. Macro keys can also be set up for use when in Communicate mode, and uploading and downloading are catered for. To this newcomer to comms, the package does not appear to include Xmodem facilities, but I could be wrong.

SUMMARY

This review of MINI OFFICE II, of necessity, only scratches the surface in some areas. The program is, after all, six individual pieces of software, but incredibly well integrated. Yes, there are some shortcomings. I will, personally, still continue to use PaperClip for word processing, but the inbuilt word processor does give additional options for the formatting of reports from the database. In my opinion, twenty pounds (less five pence) is a reasonable price for any *one* of the six modules (well, maybe not the label printer) and anyone who wants to use their ATARI for purposes other than games should not go wrong in purchasing MINI OFFICE II. This is a product that Database Publications must be proud of. •

Mini Office II



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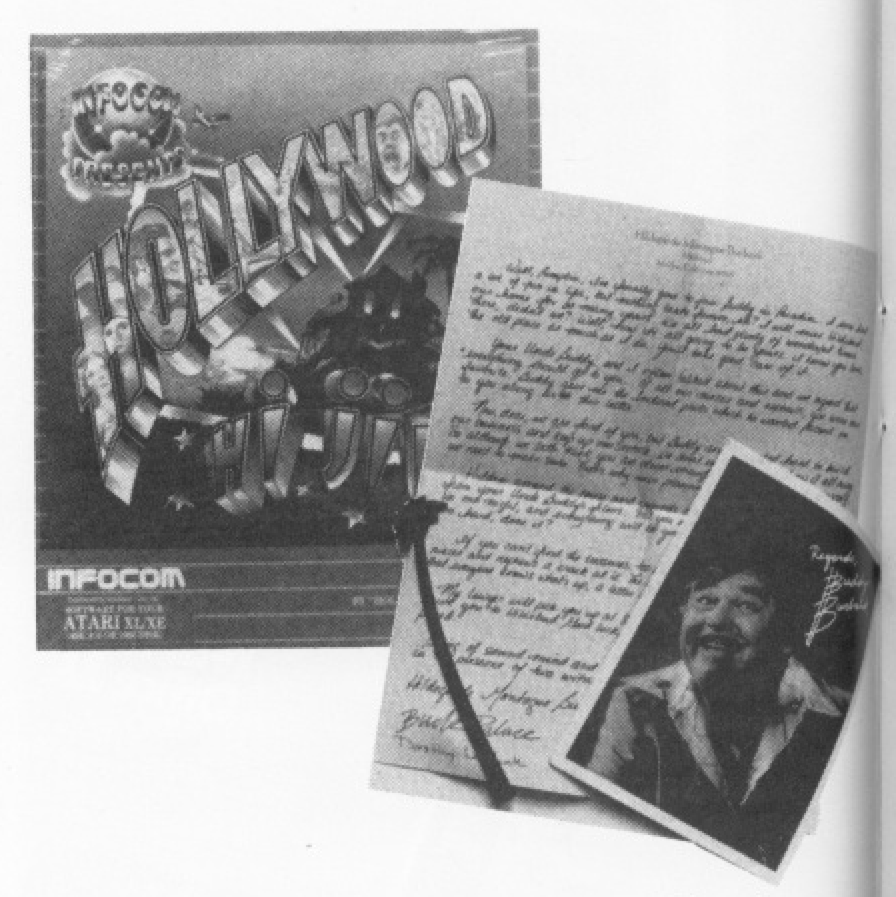
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P7

Hollywood Hijinx
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"Vampire Penguins. A Corpse Line. Meltdown on Elm Street. Who could forget these classic Hollywood movies produced by your uncle, Buddy Burbank? But his greatest masterpiece has yet to be experienced...HOLLYWOOD HIJINX, starring YOU!"

So starts the description on the back of yet another Infocom text adventure, or Interactive Fiction as they like to call them. You turn the excellent (as always) package over to check the front for Infocom's standard categorisation of difficulty level and genre and find... nothing?!

Although, from the description, one can deduce that it fits into the Mystery genre, how is one to ascertain how difficult it is? Is it like Moonmist, aimed at 9 year olds and up? Or is it like Spellbreaker – be sure and buy the hints package too!? It doesn't say Introductory, Standard, Advanced or Expert in Infocom's usual manner. Have they decided that they are limiting their potential audience too much by specifying the difficulty level? Or is this just an exception? If you check out the advertising photo of the game in the brochure that comes with it (using a magnifying glass!) you can just make out that the box in the picture says "Mystery. Standard Level.". Is this all part of a plot to confuse us all? Will all be made clear when Infocom's next offering reaches us – 'Bureaucracy' by Douglas Adams (of Hitchhikers' Guide to the Galaxy Fame)? No, knowing Douglas Adams' devious mind, I suspect we will all be even more confused! Does anyone care? Or should I just get on with the review?

LOADED WITH PRACTICAL JOKES

Well, it does indeed appear to be what Infocom used(?) to classify as Standard Level. And a very enjoyable game too.

The story is set in your late uncle's Malibu mansion. According to the rather strange terms of his will you have one night to discover ten 'treasures' hidden in or around the mansion, which is loaded with practical jokes and booby traps. The 'treasures' are in fact props and memorabilia associated with your uncle's 'B' movies, including the only copy of his last, never released film 'A Corpse Line'. Buddy died of a massive heart attack while watching it. If you find it and decide to watch it in the private screening room, be sure and SAVE your game first!

The game is up to Infocom's usual high standard in nearly every respect: excellent parser, excellent vocabulary, excellent puzzles, excellent descriptions full of humour and red herrings, etc., etc. The only possible complaint is that it seems to have been finished off slightly hurriedly. They haven't implemented the abbreviation X for eXamine which they introduced in Moonmist, a great shame, and they haven't checked as carefully as usual for responses to some quite reasonable inputs, e.g. when you examine the statue in the drive where the game starts you observe that it has a belt and a mailbag (among other things), but although the game understands both 'belt' and 'mailbag' it claims neither is present when you try to examine them – such items do, in fact, appear much later in the game (the belt is actually a conveyor belt!) but to find a flaw so early in the game is a trifle disconcerting. Infocom don't usually miss things like that.

One of the best aspects of many Infocom games is the logical problems with which one is faced in attempting to progress through the story. Hollywood Hijinx is no exception to this. I especially enjoyed the problems of getting light into the Bomb Shelter and reaching the Attic. Because they are so logical and so well presented, you can actually solve them while not playing the game. One of them I solved while driving to Basingstoke, the other while cleaning my teeth! It is also fascinating how different people approach problems in completely different ways. For instance, I was stuck on the problem of getting light into the Bomb Shelter for well over two hours! I tries all sorts of weird and wonderful things before I finally cracked it. But when I posed the problem to Philip Robinson (you may have seen his article and program on 3-D Graphics a couple of issues back), throwing in as many red herrings and as much extraneous information as possible, I hadn't even finished stating the situation when he said, "Well, if I was doing it, I would ..." and proceeded to outline the exact answer immediately!

Like all good adventures it has a maze. And, like all good Infocom adventures, the maze is different. This one is a hedge maze with about 180 locations! As you walk around it you get descriptions like "You walk 20' east. You are at a junction. You can go west or south." Great fun. If you do decide that you want to map it then I suggest you use graph paper, and I

really think that it should have told you (since you can walk around the outside of it) that it is about 200 feet across and about 350 feet wide. I had to start three times working to smaller and smaller scales as I kept running off the edge of the paper!

A COMPLAINT?

Coming back a minute to complaints, one other complaint I have seen levelled at the game, and at Infocom in general, is that they haven't IMPROVED their standards. Other adventure producers are now producing games with high quality graphics, key-ahead on most machines, RAM SAVE facilities, 'better parsers', and so on. Personally, I am quite happy for Infocom to refrain from using graphics. I have rarely found that adding a few pictures to a game, no matter how pretty they are, does anything to improve it, unless, of course, you are going to go all the way and have the pictures contain clues and the player interact with the graphics. Games such as Black Cauldron and King's Quest III are very enjoyable – but they are a rather different kettle of fish!

The question of a 'better parser' is also pretty dubious. All the attempts at that which I have seen so far have gone too far towards trying to impress you with clever imitations of artificial intelligence but always at the expense of the game play and the clarity of the game. As far as I am concerned they ARE games. And anything which detracts from my ability to enjoy the game is NOT good. Infocom's approach of defining the limitations of their syntax very precisely, and of programming the game to tell the player exactly which word or grammatical construction is not understood, is in my opinion the correct approach. This allows the player to enjoy the game without worrying whether it is the game or the player that is at fault when he or she gets stuck.

As for the other areas, RAM SAVE, key-ahead, etc., yes, it is about time Infocom decided to move with the times a little. But I can live with it as long as the games remain so enjoyable.

What do YOU think? Have Infocom been overtaken by Level 9's latest offerings (maybe we need to wait and see what Knight Orc is like!) or Magnetic Scrolls' Illustrated Interactive Fiction or Broderbund's Electronic Novels or Sierra's 3-D Animated Adventure Games or Tellarium's Interactive Adventures? What do YOU think is important in an adventure? Why not write and let us know?

Anyway, to conclude Hollywood Hijinx, once you have found the ten treasures you head to the Living Room to meet the lawyer, then you notice that your score is only 120 out of 150? Sure enough, there is a sting in the tail and, assuming you work out what to do next, you will find yourself practically inside an old 'B' movie yourself as you battle to the death against your evil Cousin Herman as a beautiful lady inches towards a whirling saw blade and a gory ending!

What a finale.

Could be a little bit cheaper, but still thoroughly recommended and well worth buying.

READERS AWARDS 1986

A surprise awaited both Mark Hutchinson and Paul Lay at the recent Atari Show in London where we presented the trophies for the Readers Awards for 1986. Jim Short, unfortunately, couldn't make it from the far North (Bonny Scotland) so his award was sent through the post (I wonder if it has arrived yet!). Nobody knew who had won as issue 27 had not been published at the time so a couple of very surprised visitors to the Show were persuaded to step on the PAGE 6 stand for some piccies.



Mark Hutchinson accepts his award from Nicola (Mark's the one on the left)



Paul Lay accepting his award said he would have shaved if he had known!

STOP PRESS!

Paul Lay has just been announced as the winner of ANALOG magazine's $5000 ST programming contest! Congratulations Paul. Ain't that just dandy!



And so to the acceptance speeches. The following letter came from Paul Lay and the sentiments are, I am sure, echoed by our other two winners who also asked for their thanks to be passed on to the readers.

"My deepest thanks to all those readers who voted for Munchy Madness in the Readers Poll. I hope that everyone had as much fun playing the game as I had writing it! It really was great to receive the award and know that people do appreciate all the work that goes into a program like Munchy Madness. The awards are an excellent idea, and being lucky enough to receive one makes all the hard work seem so worthwhile."

Who will be the winners next year? Will it be YOU? Only if you send in that program or article you have thought about writing. Share it!

STAGE

The PAGE 6 ST section



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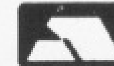
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York Computer Centre (P6), 9, Davygate Arcade, Davygate, York, YO1 2SU

Precision Software recently launched what they claim is 'a revolutionary database" for the ST. **Superbase Personal** is a fully relational database that places no limits on the number of fields or size of record. All the expected facilities of a relational database are included but what makes the package 'revolutionary' is the simplicity of its visual interface which uses 'controls' similar to a video or cassette recorder with which everyone is familiar. Another unique facility is the ability to catalogue pictures or documents produced on the ST and to call up *the actual picture* alongside the record! Price is £99.95 inclusive.

Robtek have an impressive range of products recently released or on their way including software, hardware and accessories. Much of the software is on their new **Diamond Games** label at budget prices. You can pick up **ST POOL/SHUFFLEBOARD**, a two game compilation for £19.95, **GOLD DIGGER**, which is similar to Boulderdash, for £19.95, a four game compilation called **GAMBLER** at £19.95, a mono/colour chess program, **CHECKMATE**, at just £14.95 and, finally on the software side, a **GAMES COMPENDIUM** with 10 board/arcade games at just £14.95! Hardware wise there is the **McEMULATOR INTERFACE** allowing direct reading of Macintosh disks, an **MS DOZ HARDWARE EMULATOR** giving 4 times the speed of the PC (99.9% compatible?) and, on its way, a **SCANNER/VIDEO DIGITIZER**. Accessories include a **MOUSE PAD** at £7.95, a **CARTRIDGE EXPANDER** with 3 slots and, something everybody must have been waiting for, the **MAGIC MONITOR INTERFACE** allowing you to connect both mono and colour monitors without re-booting.

Two new titles from **Psygnosis** look to be very impressive from pre-release graphics and come with the usual Roger Dean designed accompaniments. **Barbarian** is an animated fantasy graphic adventure in which the player becomes a 'dragon-slaying, monster-mangling Barbarian'. They say you need humour, adventure and dexterity to achieve your goal. The other one is **Terrorpods**, a strategy arcade game in which you must defeat invading Tripod forces. A 'three dimensional playing field with perspective scrolling' sounds to be quite impressive. Both are £24.95 and that includes all those superb Roger Dean designs.

Infogrames are a French based company with U.K. offices that have just started producing titles for the ST including **Prohibition** which may well turn into one of those classics – simple in concept but *so* addictive! The company has been producing titles for other machines – notably Amstrad – for 4 years and its first ST releases are mainly Amstrad conversions, however UK spokesman David Crossweller told us that they will now be concentrating on programs written specifically for the ST to use its full power. Between 12 and 15 titles are to be released in the coming year mainly on the games side.

Mirrorsoft have signed a new distribution agreement with the American company **Mindscape** who have achieved a top reputation for their Cinemaware range on the Amiga. Titles in the Cinemaware range to be available for the ST include **DEFENDER OF THE CROWN, KING OF CHICAGO** and **SINBAD**. Already available is **SDI**. There is also a Deja Vu series which will include the titles **DEJA VU, SHADOWGATE** and **UNINVITED**. Further details and release schedules will be reported as soon as known.

Kuma's latest is **K-ROGET**, a GEM based thesaurus based on the internationally acclaimed Longmans Pocket Rogets Thesaurus with over 150,000 words and phrases. Release is in June at a price of £49.95.

Metacomco has now released version 3.04 of the famous **Lattice C compiler** which they say is 'a superlative C compiler of which we are rightly proud'. The revision includes faster maths routines and a new link/loader called Debug+ which is claimed to produce programs 'blazingly fast'. A Resource Construction Editor which allows easy construction of icons, menus, dialog boxes and the like. There is lots more (a three page press release!) included for just £99.95.

Software Express have recently signed a distribution agreement with Austrian based company **Vogler Software** who produce some top quality business and professional programs for the ST. Top of the range is **Merkant**, a modular expandable business program for stock control, invoicing and basic accounting. The program features a huge variety of functions including the unique ability to leave the program to run a word processor like 1st Word and then return to where you left off! Other products include **JackSpell**, a background spelling checker that looks like giving Thunder a run for its money. Features include 64,000 root words and up to 32 endings for every word giving a staggering 2 million word capacity! **ShortCut** is a simple but useful program to allow you to define your own keyboard 'macros' for use in other programs. **Jackfont** is a font editor for system fonts and VDI metafile fonts which can be used with Easydraw, DEGAS Elite and other similar programs. Most of the software has been under development in Austria since the ST was first released and promises to be of high quality. Prices and release schedules should now be available from Software Express.

Towards the end of May **Software Express** rush released **The Election Program** in time for the General Election on June 11th but it is a program that can still be used to do 'what if' exercises and for future by-elections. Basically a huge database of Election results, the program can predict the result of swings for future elections, analyse by-election results, show the details of any constituency in the UK and much, much more. Most of the information is represented using maps of the various regions of the UK and you can watch the results coming in depending on the selections chosen. A full update of the 1987 General Election will be available shortly or there is a facility to add results yourself. A super program, whether you are interested in politics or not. Perhaps the most original program yet for the ST. Price is £29.95.

Can anyone keep up with **Microdeal**? Now licensing products from the U.K. as well as the States, latest releases include **ST REPLAY**, a sound digitiser which has had some high recommendations from those who have used it. This comes as a cartridge and software for £79.95. Also licensed from 2 Bit Systems is **ST DIGIDRUM** which has many sampled sounds to enable you to set up your own drum machine for £24.95. Also available, at £14.95, is **DIGIDRUM SAMPLE DISK 1** with 41 samples that can be loaded into the original program. If you are into MIDI then **SUPER CONDUCTOR** might be the sequencing package you are looking for at a reasonable price. Lots of features for mixing, transposing, editing and more in sixteen tracks. For £49.95 that might be just what owners of a Casio or similar are looking for. •

TIME WARP

Star Raiders to Goldrunner six years apart but still close?

(There are some serious ones here too!)

GOLDRUNNER
Microdeal
£24.95

Reviewed by John Davison jnr

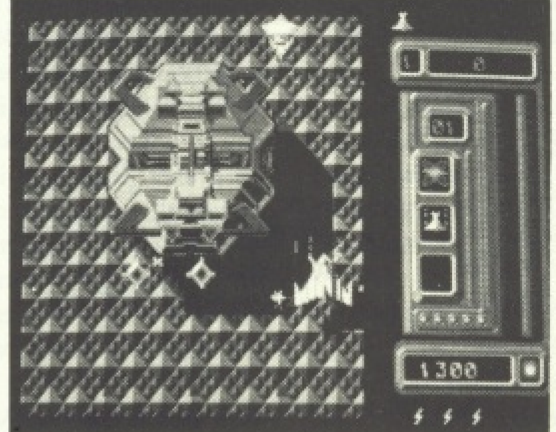
An Arcade Machine Inside Your ST!

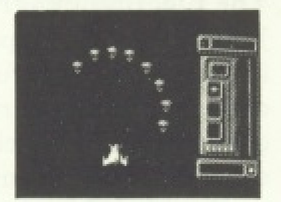
The Plot: The Earth is dying (yet again), but luckily in this future scenario, new worlds have been discovered and the only thing which stands between the poor innocent people of Earth and these new planets are the 'Ringworlds of Triton'. To pass through these Ringworlds, the awesome weaponry onboard must be destroyed, and that's where you come in! Guess what, guys? You've got to get into your one man fighter and blast the baddies! (haven't I heard this somewhere before?)

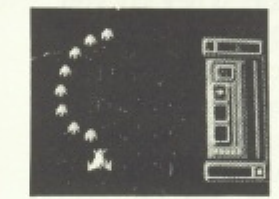
The Game: Yes, it's vertical scrolling shoot 'em up time again, but this time with real class. You control a fairly large golden spacecraft known as the Goldrunner, which can fly about all over the screen. The main aim is to obliterate ground installations in order to weaken the power of the particular Ringworld which you are on. When you have done this you may leave the level via a portal, go on to a bonus screen, and then on to the next Ringworld. Sounds straightforward but it is not that easy!

There are plenty of aliens to zap, which swoop around your ship dropping 'disruptor bombs'. These are like homing missiles which zero in on your ship, and you'll need a lot of skill to learn how to dodge them without getting hit. You can withstand about seven or eight hits before being destroyed but before that you'll lose your booster (a sort of mega turbocharger that zips you out of danger) and your wing lasers (extra firepower). To add to the danger from the sky, you can also be killed instantly if you fly into a tall ground installation.









'just about flawless'

It takes good memory and a keen eye, if you're to avoid being mangled up against the nearest wall!

The game design is just about flawless. The scrolling is ultra smooth and mind bogglingly fast, the backdrops are beautifully detailed and the animation of your ship is excellent. The aliens are colourful and the music is some of the best, non-digitised, yet heard on the ST. It's by the musical maestro Rob Hubbard, and I guarantee that after you've played the game you'll find yourself humming the tune! The digitized speech during the game is used to good effect, although it is a bit scratchy. As a feat of programming I cannot criticize it – Steve Bak (author of Karate Kid II) has produced a real stunner, and Pete Lyon (who did graphics for KK2) has done some really eye catching graphics. But how does it play?

Well, to start with you'll find it infuriatingly difficult, it is a VERY hard game. When you have finished level one though, you will feel a great sense of achievement, however you will still find it difficult trying to get past level one again on another go. The next two levels are fairly easy, but level four is a real nasty. I have been playing the game now for about a month, and I still cannot do it.

The game can be played using a variety of control methods, either a joystick, which is most people's natural choice, the keyboard, which I found extremely hard, or the mouse which was weird. You can swap between these controllers at any time during the game, as the ST is monitoring all three at the same time.

Conclusion: Well, what can I say? It truly is one the best blast 'em games ever written. But that's it, nothing else, just pure mindless blasting. Many people will find the game far too hard and therefore boring, but those of you who are good at this sort of game will love it. The game is pleasing to the eye (those graphics are really stunning), the scrolling is some of the smoothest and fastest I have ever seen, and the music is truly superb. One note about the sound... if you turn off Mr. Hubbard's excellent tune then don't expect any mind blowing sound effects! The basic sounds in the game are pretty feeble, so if you don't like the tune, you'd be better off turning the sound on your monitor down!

Steve Bak and Pete Lyon seem to have this knack of creating classics, Karate Kid II was their first, and this will undoubtedly be their second. It's like having an arcade machine in your own home, sitting inside your ST. •

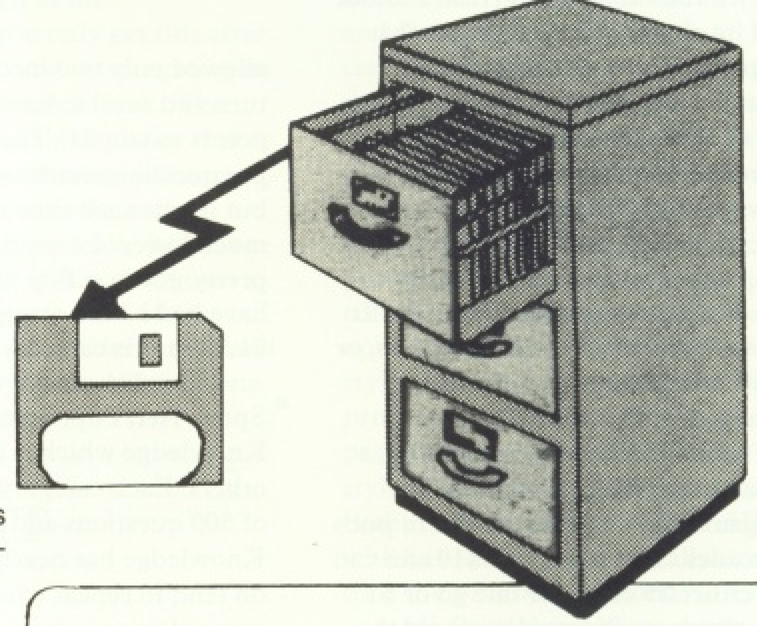
CARD FILE

THE EASY TO USE DATABASE FOR THE ATARI(TM) ST

MENU DRIVEN

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2. Update/Examine Existing File
3. Open An Existing File
4. Produce Prints
5. Back To Desktop

1. Go To A Record Number
2. Add A New Record
3. Go To Record Key
4. Delete A Record
5. Page Through File
6. Edit A Record
7. Return To Main Menu



EASY TO USE

Create a database in seconds
Define a layout – up to 16 Fields of up to 60 characters each – 1 record per screen is displayed for printing, editing or deleting.

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Print an individual record, a range of records or whole file.
Chose which fields from a record to print.
Print record numbers and field names if required.

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Change any field on any record. As there is no explicit key field there is no restriction on changing any field. Add new records to the database – up to a maximum of 32767. Delete records from the database when they are no longer required thus freeing disk space. As new records are entered they are immediately saved to disk – there is no chance of losing hours of input in case of hardware failure.

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Desc : Database
Max Fields : 16
Max Length : 60
Max Records : 32767
Edit : YES
Print : YES
Key Search : YES
Rec Search : YES
Price : £24.95

'P' To Print, 'Q' To Quit, 'N' for Next Record

EXAMINE

Search the database using any field as the key field and either full or partial data as a key. Find records with equal, lesser or greater key than the first one entered. Print individual records as they are presented on the screen. Go straight to a known record number without having to page through the whole database.

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TRIVIA CHALLENGE 1
Microdeal
£19.95

Reviewed by Les Ellingham

With the success of Trivial Pursuit and all its clones it is no surprise that trivia programs should appear on computers. What is perhaps surprising is that so few of them should have appeared! This one, written by Steve Bak, is graphically quite simple but quite challenging and keeps you coming back for 'just one more try' as all good computer games should do. It has the added bonus of allowing you, or a friend, to add almost unlimited questions of your own.

Trivia Challenge is, essentially, a one player game being based on the trivia gambling machines found in pubs and arcades. You start with $10 and can insert either 25 cents for one go or $1 which gives you five credits. Once the coins are 'inserted' you click on the word play and your first question appears. After a short delay to enable you to digest the question, three alternative answers appear and you click on the one you feel is correct. You have a limited time in which to answer and the faster you answer, the more points you score. Actually winning something is quite difficult as you are allowed only two incorrect answers in a turn and need to score at least 1000 points to win $1! The maximum points per question seems to be around 116 but if you need time to think it will be much lower. I consider myself to be pretty good on Pop music, but even so have had a hard struggle winning even $1.50 in this category!

The disk comes with the categories Sport, Art, Pop, Science and General Knowledge which is a mix of all the others. Each category has a minimum of 500 questions and General Knowledge has nearly 2,000. Questions do tend to repeat when you play the game after switching off, but the answers do not always appear in the same order. The questions are well thought out, interesting and particularly 'English' despite the $ winnings and the frequent spelling mistakes! Mind you if you want to be pedantic I suppose you could always load up the questions with your word processor, spell check them and save them back! Full instructions are given to create your own question sets with any ASCII word processor.

All in all, Trivia Challenge is great fun and highly recommended for any trivia buff, especially those who cannot find any friends to play with. Finally, for even more fun, how about using the 'do it yourself' option to load in all of the official questions from Trivial Pursuit, practice like mad and then thrash the life out of everybody at the next party!! •

TIMEBLAST
Microvalue/Tynesoft
£9.95

Reviewed by John Davison jnr

Tynesoft are not noted for titles of superb quality, so I was a bit dubious about reviewing one of their first ST games – TIMEBLAST. Upon loading the game I thought that maybe, just maybe, they might be better on the sixteen bit than on the 8 bit machines. After a while, however, I concluded that this is a pretty boring game.

It is, basically, just a rewrite of the ancient classic 'Scramble' but without the bombs. The closest game to it I can think of is 'Tail of Beta Lyrae'. The graphics have been enhanced considerably but what it has gained in beauty it has lost in speed. This game is so S-L-O-W it is virtually unplayable unless you have the slowest reaction time in the universe! There is not much that you can really say about a game of this type, other than that you have to shoot just about everything that moves, no matter how slowly!

The scrolling isn't bad, and the backdrops are fairly good, but I have seen better. The sprites are well defined but not very well animated, the movement being a little painful on the eyeballs after a while. The sound effects aren't very good and there's no music at all. All this leads to a fairly mediocre game of not very good quality. The only redeeming feature is that is cheaper than almost any other game on the ST. •

STARGLIDER
Rainbird
£24.95

Colour or monochrome. TOS in ROM required.

Reviewed by Steve Pedler

Ever since the ST came into being, it must have been inevitable that a game would appear which is not only better than almost anything available for the 8-bit machines but is better than anything which *can* be written for such machines. Starglider is that game. Put crudely, this is a shoot-'em-up, but one of such quality that even those who don't like such games will be impressed. It describes itself as 'an air to air and air to ground combat simulation' and I would say that is exactly right.

The plot of Starglider is simple. The peace-loving inhabitants of the planet Novenia are invaded by the loathsome Ergons (led by their despicable commander Hermann Krudd) who rapidly conquer the entire planet. Having long since discarded their armed forces, the only means of striking back left to the Novenians is an old Air to Ground Attack Vehicle (AGAV). Museum piece (literally) it may be, but it is better than anything the Ergons have, their strength lying in numbers. It is hardly necessary to point out that you are the pilot of the AGAV.

On loading the game (supplied on an autoboot disk) you are presented with an excellent title screen and the best computer-generated music (including vocals!) I have ever heard. Pressing any key launches you onto the planet's surface to be confronted with a bewildering variety of enemy craft. What are all these vessels, and what can they do? All becomes clear as you play

the game, but to give you some idea the Ergon forces range from tanks to Bute fighters (manoeuvrable but slow), proximity mines to the near-invulnerable walkers, and ground laser bases to Starglider One (Commander Krudd's ship).

Your AGAV is armed with the usual lasers and, at the start, one guided missile. The lasers are conventional enough, but the missiles are quite extraordinary. On pressing 'L' on the keyboard a clear female voice says 'missile launched' and a new screen appears which instead of showing you the the view from the cockpit of the AGAV shows instead the view from the nose cone of the missile. You guide the missile simply by steering it to the target using the mouse. I say 'simply' but it takes quite a lot of practice to hit the target consistently, and even then the missile may be destroyed in mid-flight by enemy fire. You also have shields, which are depleted alarmingly quickly by enemy missiles, and an energy supply which is also gradually used up during flight. Fortunately, several Novenian bases survived the Ergon onslaught, and it is possible (again with a considerable amount of practice) to dock with these silos and replenish missiles, lasers and shields. Refueling cannot be done here though – to do this involves a tricky and dangerous piece of flying, very low between the energy towers present on the planet's surface. The AGAV is destroyed if you run out of energy or if your shields are exhausted.

The ultimate aim of Starglider (from the enclosed novel) appears to be to destroy all the Ergon vessels finishing with the command ship Starglider One – no easy task! The game has several levels of difficulty, exactly how many I'm not sure although I have seen the figure of 30 plus mentioned elsewhere! You proceed from one to the other automatically as your score increases. However, I don't know of anybody who has got anywhere near the finish – perhaps only the programmer really knows how it ends.

The graphics of this game are excellent; there is a 3-D view out of the AGAV cockpit (or missile) with everything in perspective and with very smooth scrolling. Enemy ships, buildings, missiles etc. are drawn in wireframe graphics with full hidden line removal. The interior of the AGAV cockpit is very detailed with plenty of instruments and gauges. Control of the vehicle is virtually entirely by the mouse, with occasional keystrokes needed for some actions.

The packaging and documentation are quite superb. As well as the game disk, you get a 64 page glossy printed novel (essential reading to get the most out of the game), a flight manual for the AGAV, a quick reference card and a full colour poster of the vessel. Information about the various enemy craft is not included in the documentation – you only get this after docking with a silo and interrogating its computer, a nice touch I think. The documentation is of such quality that other companies publishing software at identical prices should take note.

Overall, this game really has to be seen to be believed. If you don't own a copy, go out and buy it now. If you don't have an ST, Starglider might well convince you that you should have one. ●

MI-PRINT
Microdeal
£19.95

Reviewed by Alan Goldsbro

The presentation of documents, whether a short letter or a full length dissertation is vastly improved by good layout. If there are times when your word processor cannot produce the style you desire maybe Mi-Print could assist you. Mi-Print is a program which prints any text file the way you want it, giving you control over paper size, all four margins, headers, page numbers, pitch and line spacing. Style preferences and printer definitions can be saved once set up. The program is quite small but it has a wide range of attributes and, coupled with logical design, will make your printer sing with every line it prints!

The first good point is that Mi-Print is not just for Epson and compatibles but can be defined for a huge range of printers. The default setting is for a Panasonic 1092 but my Epson LX80 had no bother in printing using the default set up. If you need to define your own printer driver, however, control codes can be entered into a dialog box in either ASCII, Decimal, Hex or control character format.

To ensure maximum visual impact, the layout style of any document is important and Mi-Print will allow you to format your documents by making best use of margins, headers, line spacing and pitch. Even all those 'Read Me' files can be formatted to your own individual style and printed out either page by page or alternately on continuous stationery.

If you are printing from a disk file, headers can be full path and filename, and the current system date and time can be printed alongside together with the page number. Margins, left, right, top and bottom are easily adjustable and there are four pre-set line spacings of 1, 1.5, 2 and 3 lines between each pass of the print head. Pitch is in three pre-set styles, pica, elite, and compressed, with a user defined optional format. Finally within the style menu there are commands for print range (from 1 to 9999 pages), page widths and heights. Printer and style menus can be saved to disk and both reside inside the PRINT.HLP file which is loaded automatically every time the program is loaded.

Mi-Print doesn't just dump to a printer, it can also send the information to screen for pre-viewing or reading or to disk for printing out later or to include in a separate document. A 'directory' menu is included and this can display any drive showing pathname, folders, and full directory listing. Just as with printing a document, the full pathname, page number, date and time are listed. Mi-Print will also simulate a typewriter. You can type continuously and press return at the end of the text to send the information to the printer or alternately send the text line by line. This is the only mode in which you cannot send text to the screen. Text can be sent to the printer unformatted for use as address labels and the like.

Six on-line help files are contained in the file PRINT.HLP. These files are sixteen lines deep each and contain basic information about each of the six menus. All of these files can be edited, saved and re-loaded at boot up.

Mi-Print is one of those nice little utilities that the majority of printer owners will find useful. The package has a 12 page manual and comes in Microdeal's usual sturdy ring binder. Whilst well written and effective in it's performance, the price of £19.95 may seem high for some owners. I liked it, however, and what's more I'll use it! ●

SUPER HUEY
Cosmi/US Gold
£19.95

Reviewed by Steve Pedler

Super Huey, a helicopter flight simulator, initially appeared for the Commodore 64, several months before it was available for an Atari, and I had been looking out for it for some time when it simultaneously appeared for both the 8-bit and 16-bit machines. This review is of the ST version.

There is a very nice title sequence to begin with and then you find yourself in the cockpit of the machine – a Bell Helicopter UH-1XA. The cockpit interior is extremely detailed, with an impressive variety of gauges and digital readouts. The graphics of the ST seem to lend themselves to producing high-tech displays like this, as can be seen in other games such as Starglider and Deep Space. The lower part of the console contains various engine and in-flight displays, while overhead there are navigational and weapons status instrumentation.

The first thing you have to do is power up the onboard computer, and having done this you may select one of the four available missions. These are Flying School, Explore, Rescue, and Combat. I naturally chose Combat first, and was quickly blown out of the sky. Back to flying school.

Flying school is exactly what the name implies. The mission takes you through take-off, flight and landing with commands displayed on the screen of the onboard computer situated in the middle of the lower console. This is a nice gentle introduction to the complexities of helicopter flight, and the manual also contains some quite detailed notes on the theory of rotary winged flight so that you can understand what you are doing when you fly the aircraft. Control of the helicopter in flight is entirely by means of the mouse, with the keyboard used for actions such as selecting the mission and loading/firing the weapons. The use of the mouse is generally quite satisfactory, but I found it very tricky to turn the helicopter and couldn't help thinking that this might have been better done with a joystick. One other point is that while the cockpit is very detailed the view out of the window is a real let-down, with very little to actually look at. This is just as well initially, as you have to concentrate hard on flying the thing rather than looking out of the window, but it does not do justice to the ST's graphics.

Having had enough of flying school, I went back into Combat. Here you take on an (unnamed) enemy desert airbase complete with hostile and very numerous helicopter forces. You don't have to do anything to find these choppers, they'll find you, and when they do the aim is quite simple – knock them all down before they do the same to you! When you are shot down it is made apparent by a line of very realistic bullet holes in the cockpit window which can give you quite a shock the first time it happens. Fortunately, unlike the real thing, you can have another go. The weapons available to you include 20 rockets and a machine gun with 2,000 rounds. Since there are 32 enemy helicopters, you can't afford to waste any ammunition.

If you get tired of being continually shot down, you can try one of the other missions. Both of these are basically navigational exercises. In Rescue, you are given the task of rescuing stranded personnel, but you are only given a general position for the party. This means that you will have to fly to the general area and search it until you detect the transmission from their rescue homing device. Once this is picked up, you follow the appropriate heading until you spot the flares sent up by the party, then land, collect them and return to base.

Finally, Explore requires you to map the terrain around your base. When the map is complete, the instructions invite you to send it to Cosmi and they will send you the correct map in return.

I think anyone who likes flight simulators would quite enjoy Super Huey. Being a helicopter simulator, it is a little different from other such programs and it does have that extra spice of getting shot at. I can't help, however, having slight reservations, particularly with regard to the sparsity of graphic detail outside the cockpit. It occurred to me that this would be an excellent game on an 8-bit Atari, but just isn't quite of the standard we are coming to expect on the ST. •

EAZY-CALC
Robtek
£49.95

A re-review by Alan Goldsbro

In the last issue I reviewed EZCalc the spreadsheet package from Royal Software. Now Robtek have acquired the distribution rights for Europe and renamed it EAZY-CALC. To their credit they have also reduced the price to £49.95 and have included a graph program as part of the package.

The program was not without its faults and this was consequently reflected in my review. My main concern was that the program didn't really match up to its name, and I still feel that this is partly true. The other area I highlighted was the inability to 'convert' VIP/Lotus 1-2-3 files files to EZCalc format correctly. This seems to have been remedied but still it could not convert templates 100% correctly. I had to make some small adjustments to the conversion but this is probably a small price to pay for what is generally a good facility.

With the graph program, Robtek have done themselves proud. EZGraph sits in memory as an accessory and can be pulled down at any time to take up half of the screen as a default, but, like any other window, it can be sized to suit your own requirements. Bar and Line graphs, each with four variations, single, stacked, overlay and compare coupled with a Pie chart make up this impressive accessory. Labels can be dragged from the spreadsheet to the graph to make up your titles. Cells can either be dragged individually or whole ranges ported at one go. Up to four full sets of data can be displayed on the graph resulting in a highly visual and pleasing display.

Graphs can be saved to disk and the retrieval time for 'saved' graphs was almost instant. Printing the graphs does not provide any problems providing you have an Epson compatible printer. Quality dumps without any significant distortion were produced in under two minutes.

Everything taken into account, the graphing program from EZCalc really is worthy of the title easy, although most of my earlier comments regarding the spreadsheet still apply. On reflection, what was a program destined to collect dust on many suppliers shelves, could now be a good buy. •

MIGHTY MAIL
Microdeal
£29.95

Reviewed by Mark Hutchinson

Helping to run a user group magazine means keeping records of subscribers' names and addresses, any information they tend to give about their system and, always, the onerous task of making labels for the envelopes. I have been using a Basic program to write the labels, but not a keep database. I have never had the time to set control codes for the printer so that the label spacing is right. This meant writing a few labels, resetting the head and printing a few more. You can imagine my joy when the postman delivered my copy of MIGHTY MAIL.

The disk contains both an American and U.K. version of the program, along with several example files. The instruction come in a 41 page booklet. The program is GEM based and extremely easy to use, but it is wise to sit down, set up your own labels, and experiment with the various options. This is far easier and quicker than reading the instructions (who does that anyway?).

I set up a small batch of records and tried out a sample print. The result was quick and clean, but was far larger than the standard 1.5" labels. Silly me, the ST sends out a line feed and I forgot to reset the DIP switch (set for the 8-bit). Problem solved.

The next problem came shortly after that. MIGHTY MAIL will print an error message to the screen when it is in trouble. This one told me it had a truncated record and the program code where it occurred. I set up a new file, only to find that the program could not access the drive. I used a new disk and all went well. Then I remembered that Microdeal use a bulk copying program that only writes the tracks it needs. Another problem solved. Time for a break and a good read of the instructions.

Back to the keyboard and more experiments. The file I had set up contained 16 fields in what is termed a mask, enough for most purposes but limited for my own personal records (the amount of hardware I possess!). I set the fields for several records and found an option to delete duplicates, of which I had a few by now. Once the file was set up I had the options to Search Mask, Search Next, Get Previous, Get Next, Delete, Show By and Exit. Show By will sort records by Company Name, First Name or Postcode. Setting the fields is done with the mask options. This will set a high and low marker so that if you enter 'Mark', for instance, you can print any record alphabetically before or after 'Mark'. The autotype mask is very handy if most of your records have a similarity. It will hold the common data, speeding up entries.

There is a layout option whereby you can change the default layout of both labels and reports. This is adequate, but I believe that, if the program is used for different types of record, a bit more flexibility would be required by the user.

Like everything else, the more it is used the easier it becomes. I found it a bit awkward at first until I set up my own records and fiddled about. A nice little program, worth considering if you need a mailing list. ●

STAR RAIDERS
Atari Corp.
£24.95
Colour monitor required

Reviewed by Steve Pedler

Shortly after the release of the first 8-bit Ataris, Atari themselves published a piece of software that was to revolutionise the computer game. This was Star Raiders – since much imitated on other machines with varying lack of success – a game which has been consistently voted one of the best ever written. Even today, many Atari owners would include it in a personal top three 'best games'.

I mention this ancient history to try and impress upon those readers new to the Atari community the special place Star Raiders has for us. At last, after a long wait, the ST version of this classic has appeared. How does it compare with the marvellous original?

When I first loaded up the game, I did so with a certain amount of apprehension. Would this be a much-enhanced version of the original taking into account the best features of the ST, or merely a completely different game relying on a famous name to sell? Fear not, this version is almost entirely faithful to the 8-bit original, with one or two minor changes that in general enhance the game play.

One very pleasant surprise came on reading the manual. The first instruction given is to make a backup copy of the master disk, and use the copy routinely. That's right, Atari have not copy-protected the disk in any way. For this I applaud them for, although it has never happened to me, there can surely be nothing worse than buying an expensive piece of software and then losing it through some disaster which is no fault of your own. If we want more software publishers to follow this line, however, I must beg and entreat ST owners neither to give away or sell pirated (i.e. stolen) copies of the game nor accept such a copy if it is offered to you. This has caused too much damage to Atari owners in the past for anyone to want to see it repeated on the ST.

Anyway, onto the game itself. The plot of Star Raiders is simple. You are one of the elite 'Star Raider' pilots of the Atarian federation, which is under attack from the Zycroids (any relation to the Zylons of the original?) a race of mutated robot creatures bent on destroying humanity. The aim is straightforward – knock out all the Zycroid ships in your quadrant before they get you!

On loading the game (from the GEM desktop) you select the difficulty level using the mouse and then start the game. This is the only time the mouse is used, game control being entirely by joystick and keyboard, as in the original. Four levels of difficulty are available to you. As in the 8-bit version these are classed Novice, Pilot, Warrior and Commander. When the game commences the upper half of the screen shows a scrolling 3-D view out of the window of your starcruiser, with the lower half containing the control panel. This includes status lights for shields and weapons, a tally of the enemy destroyed and an external systems indicator showing you the current enemy vessel being tracked by your ship's computer. In the centre of the control panel there is the tactical display, which can operate in three modes – galactic map, long range scanner and aft viewer. Those readers who have played the 8-bit version will recognise the similarity here, but one useful feature is that the use of a tactical display like this means that you can have both forward and aft views available simultaneously. The control panel is graphically very well done, as it is in many such games written for the ST.

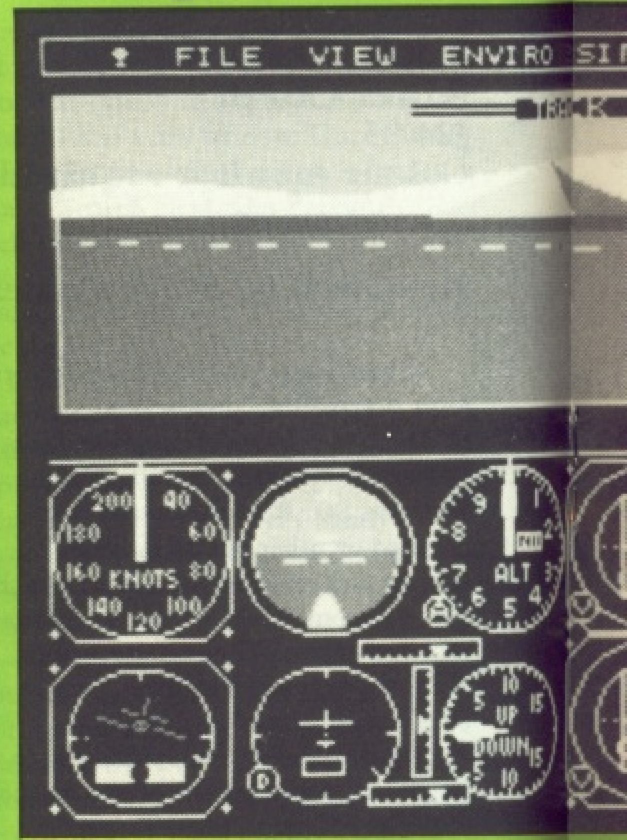
'an all-time classic'

Before you commence battle, it is advisable to turn on the onboard computer, which among other things displays the gunsight and provides a head up display of information about distance and bearing to the enemy ships. You should also turn on the shields, without which the ship will be blown to atoms within seconds of finding the Zycroids. This brings me to one point that is a little different to the original – you don't actually have to go and look for the enemy, they come and find you! There are seven types of Zycroid craft, each with its own particular attack pattern. You don't see them all in the easier levels, but are only faced with the less dangerous ones. Graphically, the Zycroids are superb, all you would expect to see on the ST. In fact this is true of all the game objects from the meteors to the stunning rotating starbases to the victory flyby accorded to you if you destroy all the Zycroids. Did I forget to mention the starbases? Because your fuel is limited, and because you may sustain damage to vital systems in combat there are a number of starbases at which you can refuel and be repaired. The Zycroids will attempt to destroy the bases, but this should be prevented at all costs. There was a justifiable complaint about the 8-bit version that docking with the starbases was extremely tricky, but this is thankfully not the case here. The game sound effects are simple but adequate, and are spectacularly loud – the room will reverberate if you turn the sound right up.

The quadrant of space you are in is divided into sectors, and you must use your hyperwarp system to move between them. The hyperwarp graphics are very realistic – rather similar to that which you see in the 'Star Trek' movies. Unfortunately one feature of hyperwarp has been discarded in this version – the need to steer through hyperspace in the higher levels. I don't know why this isn't there, it always added an extra dimension to the gameplay for the more skilled player. However an added feature with no counterpart in the original is something called the 'Emergency Atomics Unit'. Using this, which you can only do once between visits to a starbase, will destroy all the remaining Zycroids in the sector and warp you out of trouble fast. Again I'm not sure why this is present – in truth I wouldn't have thought the game difficult enough to warrant this feature. That brings me onto my final point, concerning the overall difficulty of the game. On the 8-bit version I find Novice level to be easy, Pilot to be hard, and I can only survive for a minute or two at the hardest levels. I am not a particularly skilful player of this type of game, but on this version I can survive easily at Warrior level and even the hardest level of all isn't that troublesome. I just wonder if experienced game players might find this just a little bit too easy.

So there it is, the ST version of an all-time classic from Atari. If you know and love the original, you'll like this one too. If you own an ST but have never played Star Raiders this is your chance to find out why it has such a great reputation. Definitely one to add to your collection. •

Flight Simulato



by John S D

FLIGHT

I've long thought Sublogic's Flight Simulator programs to be supreme in the simulation world, and was delighted with the version released on the 8-bit Atari (see Issue 21 for a detailed review). The advent of the ST has opened up a whole new world of possibilities, and Sublogic have responded with a magnificent new version of Flight Simulator II, utilising virtually all of the ST's new features. There's only one word for the resulting package – stunning! And it's sufficiently different from the 8-bit version to fully justify this 're-review'.

I won't go into details of the basic program, as in concept it's identical to the 8-bit version. Instead, I'll describe just the differences and enhancements. There are lots of these, and most of them will blow your socks off!

The package is similar to the 8-bit version, but the program and scenery data is now on one single-sided 3½" disk. Instructions are contained in one 132 page, fully indexed, spiral bound manual of very high quality. Sublogic have dropped the second manual as supplied with the 8-bit version, so you don't get to learn about the theory of flight, nor do you get the eight flying lessons. However, the ST manual does contain everything you need, including many useful diagrams.

MORE OF CALIFORNIA

In addition to the 8-bit's maps of Los Angeles, Chicago, Seattle and New York areas, this version also includes San Francisco. The area covered adds 47 new airfields (several equipped with Instrument Landing System) to the 81 in the 8-bit version. You also get many new radio navigation beacons to help you find your way around. The new area is extensive, measuring about 250 miles north to south by about 200 miles east to west – enough to keep you busy exploring for a long time!

On boot up, you find yourself in a Cessna 182 lined up for take-off from runway 27R of Oakland International airport on San Francisco Bay. Yes, it's a different aircraft from the 8-bit version, and yes, the boot-up default is into the new map area. The instrument panel looks strangely familiar, but on closer inspection there are minor differences, such as retractable undercarriage controls, different flap settings, autopilot, and different radio and engine instrument layout.

The myriad program controls are available either through the keyboard, or via mouse activated pull down menus. They're all summarised on a reference card thoughtfully included in the package by Sublogic. Additionally, the mouse can be used in place of keyboard for primary flight controls, but I found this rather clumsy and preferred using the keyboard.

SUPERIOR GRAPHICS

Looking through the windscreen you can immediately see a difference from the 8-bit version. The scenery graphics in the San Francisco area are far more sophisticated than those in the 8-bit version. For instance, items such as runway markings are colour filled shapes, not single lines or 'wire frames', and there are more buildings to be seen. This only applies to the new area, though, the others seem to have been transferred from the 8-bit with very little change.

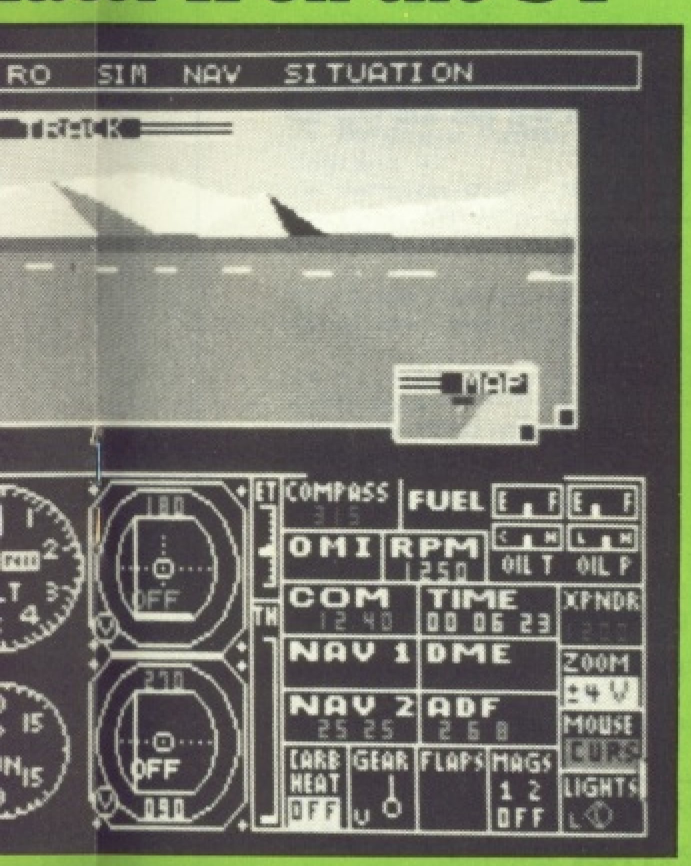
As soon as you start the take-off run, the ST's muscle power immediately makes itself felt. The screen refresh rate is very much higher than before, making the view through the windscreen look more like a film than computer generated graphics. The runway markings glide smoothly past as you gather speed and lift the Cessna into the air. Almost immediately, the water of the Bay comes into view, and soon after that the massive 8 mile long Bay Bridge between San Francisco and Oakland. Flying straight on you quickly pick up the skyscrapers of downtown San Francisco. As you get closer you see they're colour filled 3D graphics (with hidden lines and surfaces removed!). That famous San Francisco landmark, the Transamerica Pyramid is there – a huge, 853 feet high, pyramid shaped office block. You bank the Cessna and switch to a view from the side window, really getting the feeling you're flying round a solid building. All along the waterfront you see the piers and moorings of the port area, with the Fisherman's Wharf tourist spot at the far end.

Continuing your original flight path you see in front of you the most famous San Francisco landmark of all, the Golden Gate Bridge. Its portrayal here is excellent – I flew the Cessna round and round it, inspecting it from all angles, and marvelling at the skill of the Sublogic programmers.

Flying back to Oakland you pass over the island of Alcatraz and notice that the prison building is there – Sublogic have thought of everything. The graphics on approach and landing at Oakland are as impressive as the take-off. And on touchdown, the tyres really screech as they hit the runway – it's worth doing a lousy landing just to hear that noise several times over!

The improved graphics are easier to look at in this version of the simulator, as it allows you to finely adjust the direction of view you get from the aircraft cabin. You are not limited to the 8 fixed directions, as before. Further, you can adjust the

lator II on the ST



an S Davison

angle of view up or down – very useful when in a steep climb or descent. There's also a new zoom control to enable you to get a closer look at the central part of the screen (up to 511 times magnification). If you want a wider view you can do this too, with a magnification down to 0.25! OK, so we're getting away from realism here, but it's a useful feature, especially when used with the other new viewing facilities I'm about to describe.

SEE YOURSELF AS OTHERS SEE YOU

A major addition to the ST version is the ability to view your aircraft FROM THE OUTSIDE. That's right, you can now see how your aircraft looks as you fly it. Microprose's Solo Flight has been doing it for years, you say? Not like this, it hasn't! You have the choice of two different vantage points, either from a spotter plane flying near you, or from a control tower on the ground.

You can set the position of the spotter plane relative to yourself, on either wingtip, in front looking back at you, behind you looking forward, or looking straight down from above. Also, you can set the distance between you and the spotter and the height above or below you that it flies. After selecting the viewpoint, you see the view on the screen gradually change as the spotter plane flies to its new position! Now, as you manoeuvre your aircraft, you see it move about relative to the spotter's viewpoint, but the spotter always eventually gets back into its requested position. The view you get during aerobatics is truly thrilling, as the spotter tries to keep station as you cavort around the sky.

The control tower option is just as spectacular, but in a different way. This time, you get the view of your aircraft from the ground. For best effect, you have to make use of the zoom controls mentioned earlier. As you fly away from the airfield, the program automatically pans the viewpoint to follow you. Eventually, you get so far away that you can't be seen even on full zoom. So – here comes the amazing feature – you select the Track function. The view you get now is as if the control tower has taken wing and is streaking after you at very low altitude and at tremendous speed! You rush THROUGH the landscape, whizzing past buildings, over water, under bridges, whatever....until it's repositioned at the distance away from your aircraft originally requested. The effect is startling, incredible, fantastic, exciting....I'm running out of suitable adjectives! All the time, your aircraft position is kept in view on the screen, marked with a small dot. The dot slowly grows in size until it becomes the familiar shape of your aircraft once again. The effect can really be quite breathtaking.

You can switch between views from inside the aircraft, to spotter plane, to control tower, to tracking view anytime, at the press of a key or mouse button. Even more astounding, you can set up multiple windows, each with a different viewpoint and you can add a radar/map window too, if you

FANTASTIC

need it. Windows can be positioned and sized to suit your needs. For the ultimate in views you can slide the instrument panel down giving a full screen display for any view. This is really spectacular when landing (if you're skillful enough to manage without instruments!).

FLY WITH A FRIEND

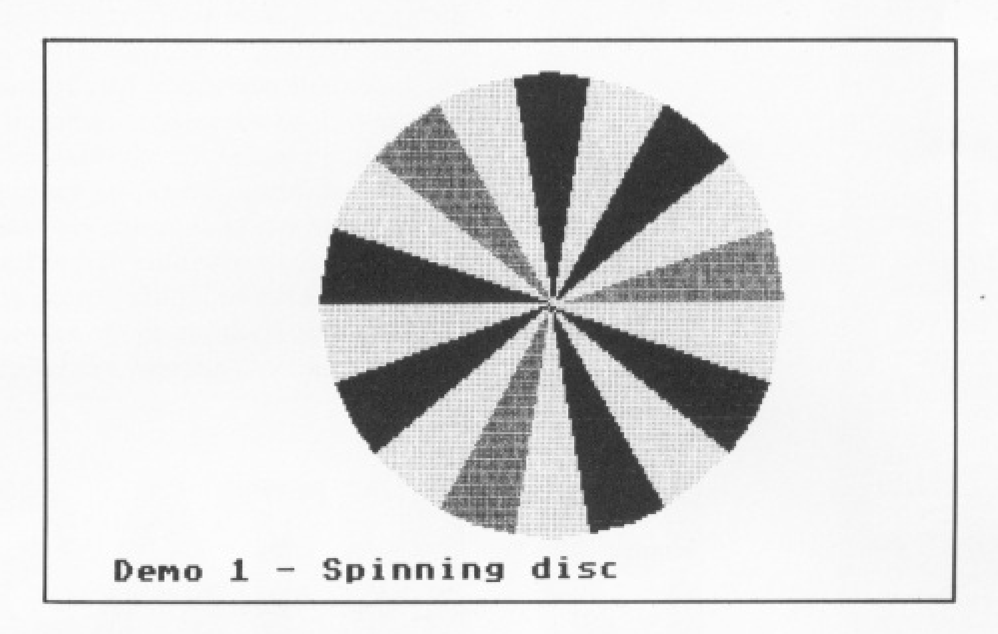
As if all this weren't enough, there's yet another brilliant new feature. It's possible to link two ST's together (each running the program) via the RS-232 ports and run in 'multi-player' mode. This means you and a friend can each fly an aircraft, and each can see the other on his own screen. The ST's continually exchange data via the RS-232 link on position, height, etc. You need a null modem cable to connect the machines, or alternatively you can use modems and conduct a two player game via the phone. Communications facilities are built right into the program! You can send and receive radio messages to/from the other player too (via the keyboard).

JOIN THE JET SET

If flying the Cessna becomes too easy, try selecting the Learjet option. This is a completely different ballgame, as a Learjet is a twin engined executive jet aircraft, capable of flying at 450 knots at altitudes up to 50,000 feet. My only grumble about this is that the instrument panel remains broadly similar to the Cessna, so the simulation is somewhat lacking in visual authenticity. It's great fun, though.

There's a lot more detail I haven't covered, like the World War I Ace game, action replay, autopilot options, ramdisk for saving/loading scenarios, additional weather features (like ground fog and turbulence). I could go on writing about this forever. By now you must have gathered that it's a program not to be missed by any ST owner. If you have an ST you MUST, repeat MUST, add this program to your software collection. It's the finest piece of simulation/ educational/ entertainment software I've ever seen on a home computer and worth every penny of the £50 asking price. •

Using GEM from the C language


Demo 1 - Spinning disc

A tutorial series by Steve Pedler

Having acquired an Atari ST, I went through the phases I imagine many new owners experience – starting off by finding out how to get the computer powered up, playing a few commercial games and trying some public domain software and finally, when the immediate euphoria wears off, actually attempting to program the machine yourself. It is at this point that you discover that ST BASIC is not exactly the world's ideal programming environment – not that it isn't a powerful interpretation of the language, but more that the screen editor provided must be one of the slowest and most unfriendly ever written, and that you are denied simple access to one of the features for which the ST is best known – the GEM interface. At that point I decided that I needed a more powerful language than ST BASIC, and with a certain amount of trepidation opted for the one that many others seemed to be using, particularly in the USA, the C programming language. I haven't regretted my choice for one moment. Using C to program the ST and make full use of GEM is so easy and produces such fast programs that I never want to return to ST BASIC again.

It occurred to me that Page 6 readers who either own a C compiler and have not yet started to use GEM, or those of you thinking about buying a compiler might be interested to see how it's done and so hopefully avoid some of the traps I fell into and so this first article came into being. I hope that you will learn with me as we examine the ways in which C can be used to program the graphics of the ST. I hasten to add that I am very much a novice in both C and GEM, and I hope more experienced programmers will forgive the need to state facts and principles which to them must seem obvious. Many ST owners, however, are still at the novice stage as regards C programming and it is for then. primarily, that this series is written.

THE DEMO PROGRAM

I have always felt that articles of this nature are likely to prove more interesting if a useful program is the eventual result. The aim of what I hope will be a series of articles is to produce a comprehensive demonstration of the graphics capabilities of the ST which you can use for your own pleasure or to show your family, colleagues and friends. To this end, I would welcome suggestions from readers concerning aspects you would like to see covered in these articles, or suggestions for graphic demonstrations. Often the hardest part is not the actual coding but thinking of something which will adequately demonstrate a particular point.

I should point out that this is intended to be a demonstration of GEM rather than how to program in C and some rudimentary knowledge of C will be helpful, however even those who do not know the language should find the discussion of the various GEM functions useful, as the principle of using them from ST BASIC is similar.

The demonstrations will take the form of a single program which carries out a series of demos in turn. This will save you having to type in the necessary initialisation code each time. In this first instalment we will set up the system for the demos and include a simple demonstration of animation using colour rotation. This powerful technique is used in numerous graphic demos and once mastered will allow you to write spectacular demos of your own.

TYPING IN AND RUNNING THE DEMO

This first part of the program does not use any of the more advanced features of C such as floating point numbers, structures or unions, so it should be compatible with all the currently available C compilers. One point to note is the #define in the first few lines which defines 'WORD' as a short integer variable. This is necessary because GEM functions expect to be passed 16-bit integers and the compiler used to write this program, Metacomco's Lattice C, uses a 32-bit integer as standard. In Lattice, a short is 16 bits long as it almost certainly will be in any other compiler, regardless of the integer size. However, check your compiler, if a short is not 16 bits long you only have to change the #define, not every occurrence of the short keyword in the program. To run the completed program, double click on its icon and click on the

```
/* GEM demonstrations from the 'C'
programming lanuage */
/* Written using the Metacomco Lattice C
compiler */
/* By Steve Pedler for Page 6 Magazine,
England */
/* Version 0.2   March 13 1987 */

/* Lattice include files */

#include "stdio.h"
#include "osbind.h"

/* ----------------- declarations,
constants -------------------------*/
#define WORD short int
#define SOLID 1



char        resalert[]="[3][ Use only low
resolution | when running this program
][ OK ]",
            hello_box[]="[1][
Demonstrations of GEM in 'C' | by Steve
Pedler | for Page 6 Magazine 1987 ][ OK
]";

WORD        contrl[ 12 ], intin[ 256 ],
ptsin[ 256 ],
            intout[ 256 ], ptsout[ 256],
            work_handle, dum, temp_col,
old_pal[ 16 ], new_pal[ 16 ],
            button,
            col_index[]={ 0, 2, 3, 6, 4,
7, 5, 8, 9, 10, 11, 14, 12, 15, 13, 1
},
            demo1();

int         finished;


/* ------------------- program starts
here ---------------------------*/
main()
{
            WORD c;

            init_gem();
            while( finished !=0 ){
                  c=demo1();
                  if( c==3 ) {
                        finished=0; break;
                  }
            }
            finish_gem();
}

/* ------------------- initialisation
---------------------------------*/
init_gem()
{
            int i;
            WORD resol;

            finished=1;
            appl_init();          /*
initialise GEM */
            work_handle=graf_handle( &dum,
&dum, &dum, &dum );    /* get the device
handle */
            for( i=1; i<10; ++i )
                  intin[ i ]=1;
            intin[ 10 ]=2;
            v_opnvwk( intin, &work_handle,
intout );       /* open workstation */
            for( i=0; i<16; old_pal[ i
]=Setcolor( i++, -1 ));
            for( i=0; i<16; ++i )
                  new_pal[ i ]=old_pal[ i
];
            resol=Getrez();
            if( resol>0 ){
```

```
                  form_alert( 1, resalert
);
                  finished=0;
            } else {
                  form_alert( 1, hello_box
);
            }
}

/* --------------- demonstration #1
----------------------------------*/
/* draw a circle in quadrants and
animate by colour rotation */
WORD demo1()
{
            int  delay, count, step, i;
            WORD starta, stopa, a, c;

            Setpallete( new_pal );
            v_hide_c( work_handle );
            v_clrwk( work_handle );
            vsf_interior( work_handle,
SOLID );
            starta=0;
            stopa=200;
            for( i=0; i<3; ++i ){
                  for( a=1; a<7; a++ ){
                        vsf_color(
work_handle, col_index[ a ] );
                        v_pieslice(
work_handle, 160, 100, 80, starta, stopa
);
                        starta=starta+200;
                        stopa=stopa+200;
                  }
            }
            vst_height( work_handle, 6,
&dum, &dum, &dum, &dum );
            v_gtext( work_handle, 8, 185,
"Demo 1 - Spinning disc" );
            c=0;
            count=5000;
            step=100;
            while( c<2 ){
                  temp_col=new_pal[ 6 ];
                  for( a=5; a>0; a-- ){
                        new_pal[ a+1
]=new_pal[ a ];
                  }
                  new_pal[ 1 ]=temp_col;
                  Setpallete( new_pal );
                  for( delay=1;
delay<count; ++delay )
                        ;     /* don't miss
this semicolon! */
                  graf_mkstate( &dum, &dum,
&button, &dum );
                  if( button==1 ) {
                        count=count+step;
                        if( count>30000 ||
count<300 ){ step=step * -1;
                              count=count+ste
p;
                        }
                  }

                  if( button>1 ) c=button;
            }
            return( c );
}

/* -------------- exit the GEM
application
----------------------------*/
finish_gem()
{
            WORD reset;
            reset=0;
            v_show_c( work_handle,
reset);
            Setpallete( old_pal );
            v_clsvwk( work_handle );
            appl_exit();
}
```

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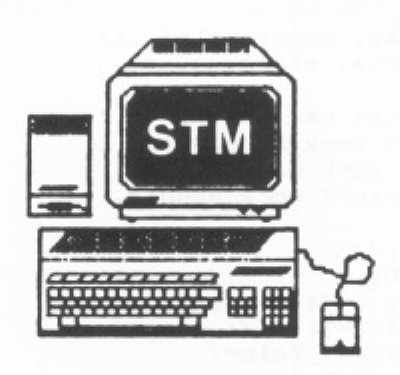


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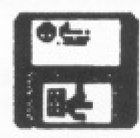


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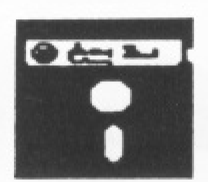
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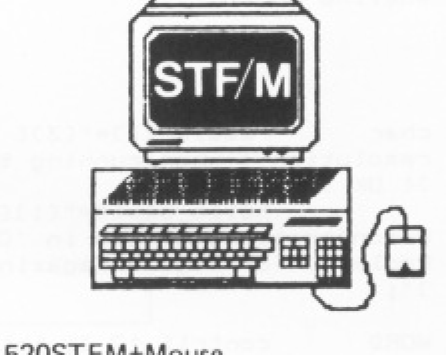


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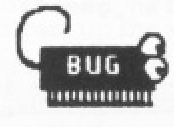
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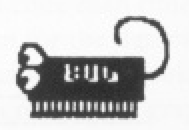


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button of the alert box when it appears. You must be in low resolution for this program, if you are not, the program will tell you so. You can increase and decrease the rate of spin of the disk by holding down the left mouse button; holding down the right button will rerun the demo, while holding both buttons will return you to the desktop.

PROGRAM INITIALISATION.

The listing starts with a couple of #include files, and two #defines, one of which defines SOLID as the number one. This is a constant used in selecting an interior fill pattern, and it is included simply because SOLID means a lot more to a person reading the listing than trying to figure out what significance a 1 might have when passed to a function. This is followed by a series of declarations; note particularly that the function demo1(), our first demonstration, is declared as returning a short variable, rather than the default int. The reason for this will become apparent.

The main() function comes next, and the first thing this does is call the init_gem() function. This carries the necessary initialisation code both for GEM and our demonstration. It starts by calling three GEM functions. The first, appl_init(), initialises GEM for a new application. The second, graf_handle(), returns a very important variable, the name or device handle of the current workstation. It also returns four other items of information about the workstation, but we don't need these so we can just use a dummy variable to put them in. Before we can open a new workstation to draw in, we have to be able to pass certain parameters to GEM. These are passed in intin[], and information received from GEM about the new workstation will be found in intout[]. As you can see, elements 1 – 9 of intin[] all contain the value 1. Table 1 gives the meaning of these values for GEM. The function v_opnvwk() will open our new workstation. It must be given the address of work_handle so it can be modified for the new workstation.

Table 1. Values passed to GEM in v_opnvwk().

intin element	value	attribute affected	result
1	1	polyline type	solid line
2	1	polyline colour	black
3	1	polymarker type	dot
4	1	polymarker colour	black
5	1	text font	system font
6	1	text colour	black
7	1	fill style	solid
8	1	fill style index	no effect as solid fill chosen above
9	1	fill colour	black

Element 10 of intin[] is set to 2. This is an instruction to GEM to use raster screen coordinates, i.e. conventional computer graphic coordinates with point 0, 0 in the top left corner and a resolution of whatever the computer concerned can offer. The alternative is Normalized Device Coordinates (NDC), which is based on a standardised screen of 32767 pixels vertically and horizontally. This offers the possibility of writing graphic applications which are independent of a particular computer's hardware.

Much of the information returned in intout[] will not be of interest to us if we are writing programs specifically for the ST. However, intout[] elements 0 and 1 will return the maximum horizontal and vertical resolution respectively, useful if you are writing software that will run in more than one resolution.

The rest of init_gem() contains code specific for our application. The demonstration will use colour rotation so the first thing we do is to move the colour palette into an area of memory where we can manipulate it. The Setcolor() function is not a GEM function but a call to the ST's operating system (it is an XBIOS call). The general format of Setcolor() is as follows:

Setcolor(colour number, colour value)

where colour number ranges from 0 to 15 and colour value is a 16 bit number representing the RGB value of the colour. But Setcolor() does more than this. It also returns the old colour value to the user, and if the colour value supplied to it is negative, it is ignored. In other words, Setcolor() as used here has the effect of changing none of the colours but copies the present 16-colour palette into the array old_pal[]. This array will be used to reset the palette to its original value on leaving the program. The next two lines simply copy old_pal[] into new_pal[] which will be used for the actual colour rotation.

The next statement is also an XBIOS call. Getrez() does what its name implies – it returns the current screen resolution. This is important to us, since this program will only work in low resolution. The values returned are as follows:

0	low resolution
1	medium resolution
2	high resolution

Having determined the resolution, the program checks to see if the user is in fact in the required resolution. If not, an alert box is put on the screen to inform the user and the variable 'finished' is set to 0. Alert boxes are printed using the GEM function form_alert, and are simplicity itself to use. The general format is as follows:

button = form_alert(default button, alert string)

where button is the number of the button the user clicked on and which can range from 1 to 3. The default button is the button which is selected by pressing the Return key as well as clicking with the mouse; it too can range from 1 to 3, or be zero in which case there is no default. Examples of the alert string can be seen as res_alert and hello_box. The general format is:

(icon)(text with lines separated by the : character)(button 1 : button 2 : button 3)

where icon is the icon displayed on the left side of the box. Possible values for this are:

1	exclamation mark
2	question mark
3	stop sign

You can have a minimum of one and a maximum of three

buttons. Since we only have one button in each of these boxes we don't need to know which one was clicked on. If the screen resolution is anything other than low, the string res_alert appears in the box; otherwise hello_box is used. On return from init_gem(), main() checks the value of the variable 'finished'. If this is anything other than zero, the statements in the while loop are executed; if it is zero, these statements are not executed and the function finish_gem() is called. Assuming the loop is executed, the demo is called as demo1(), which will return a short in the variable 'c'. If c is returned as greater than 2 the program will break out of the loop, set finish to zero so that the loop is not executed again, and call finish_gem() to exit the application.

LET'S START THE DEMO!

Now for the demo itself. The first thing to do is reset the colour palette so that we can manipulate it. This is done with another XBIOS call, Setpalette(), which is provided with the address of the new palette as its argument. We then hide the mouse cursor since we don't want it on the screen, with the GEM function v_hide_c(). Function v_clrwk() then clears the screen using the current background colour (always found in colour 0 of the palette). To be absolutely sure, although we have already done it during the open workstation routine, the interior fill style is set to solid colour with the call to vsf_interior(). The format of this call is as follows:

vsf_interior(device handle, style)

where style can have one of the following values:

style	result
0	hollow – i.e. outline only, no fill
1	solid colour
2	pattern
3	hatch
4	user defined pattern

If pattern or hatch styles are chosen you can choose from a variety of preset patterns using another function, vsf_style(). We will look in more detail at this at another time. You can even define your own fill pattern using function vsf_udpat().

The aim of the demo is to draw a disk composed of segments of different colours so that by rotating the colour palette we give the illusion of a spinning disk. The function which draws the circle segments is v_pieslice, which uses the following format:

v_pieslice(device handle, circle centre x-coordinate, circle centre y-coordinate, circle radius, start angle, stop angle)

Most of this is self-explanatory, except perhaps for the question of start and stop angles, which determine the position of the segment in relation to the centre of the circle. These are expressed in tenths of degrees, and can therefore range from 0 to 3600. An angle of 0 is due east, while 900 will be due north. By incrementing these variables by a set amount each pass through the loop, we draw a filled circle composed of a number of segments. Before we can do this however, we have to set the colour to fill the segment with, and here we run into a slight problem. The 16 colours used in the low resolution colour palette are numbered 0 to 15, with colour 0 being the background colour. Unfortunately, the GEM functions use colour indices, also numbered 0 to 15, but which do not correspond with their counterparts in the palette. In other words (for example) colour index 1 does not use colour 1 in the palette, but colour 15. If we draw with colour indices 1 to 6 therefore, but rotate colours 1 to 6 in the palette, we shall not be rotating the correct colours. To avoid this, the array col_index[] was set up which contains the colour indices in the order of the colours they correspond to in the palette.

Having drawn the disk, the next task is to print the title of the demo using the function v_gtext(). I don't want to say anything more about this at this time, except that the height of the text (in pixels) is selected by using the vst_height call. More about this next time. Finally the colours are rotated by rotating the contents of new_pal[] and calling Setpalette() each time the array is changed (changing the array without calling Setpalette() will have no effect).

The program incorporates a delay loop to slow things down to a reasonable level. In order that you can see the effect of altering the delay, the mouse buttons are checked using graf_mkstate(), which returns the current mouse attributes. This has the following format:

graf_mkstate(mouse x-coordinate, mouse y-coordinate, mouse button, shift/control/alternate key state)

We are only interested in the mouse buttons here so the other values go into our dummy variable. The mouse button returns a 1 for the left button, a 2 for the right button and a 3 for both buttons at once. If the left button is pressed and held down, the delay is increased by the value in step until a limit is reached when it starts to decrease again. Holding down the right button or both buttons at once will exit from the demo loop and return the button value to main(). If this is 2 (right button only) the demo is rerun; if 3 (both buttons together) the program will return to the desktop, terminating by calling finish_gem().

The finish_gem function is very straightforward. We first bring back the cursor using v_show_c() which has this format:

v_show_c(device handle, reset flag)

where the reset flag is either zero or non-zero. If zero, the cursor is redisplayed regardless of how many v_hide_c() calls were made; if non-zero, the number of v_show_c() calls must match that of the number of v_hide_c() calls for the cursor to be redisplayed. The old colour palette is restored with Setpalette(), and the workstation closed with v_clsvwk(). The application is terminated with a call to appl_exit(), and the whole program returned to the desktop by coming to the end of the main() function.

ALL FINISHED!

And that is it! You might say that it is a lot of effort for a very simple demonstration and I would agree, but don't forget that GEM gives us enormous graphic power that is generally very easy to use. Regrettably the price we pay is an increase in the amount of code needed to set things up. Although I have deliberately used C to demonstrate some simple GEM functions in this article, all these functions are also available to BASIC programmers, who might like to try implementing the demo in BASIC. Next time we will look at some more GEM functions and add another demo or two to the program. •

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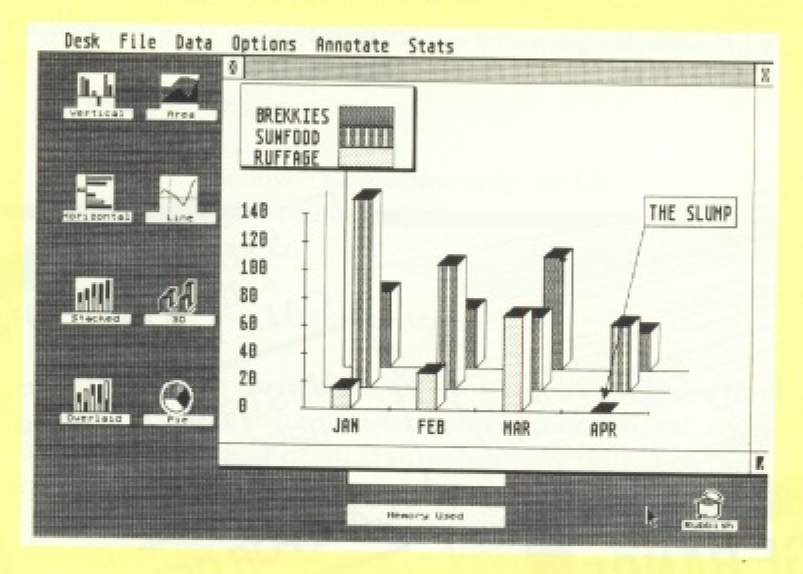
Kuma
£49.95

Reviewed by John S Davison

Here's another of the K Series of application packages from Kuma, this one providing your ST with comprehensive business graphics and statistical analysis capability. Now in its Mk II version, it offers graphs and charts to suit most uses. It is GEM based and easy to use, so at last you have a simple way to turn all that boring numeric data into something a little more digestible.

Like other members of the K Series, K-GRAPH comes in the obligatory flimsy packaging, containing a single sided disk and slim, tutorial style instruction booklet. I found the booklet to be one of Kuma's better efforts, but for the price it could (should?) be a lot better.

K-GRAPH uses the standard Kuma installation procedure to produce a working copy from the supplied master disk. On a single drive system this requires about 30 disk swaps to complete – not as ridiculous as some of Kuma's other offerings, but irksome nevertheless.



MASSIVE CAPACITY

The program produces graphs and charts from data provided either by existing data files from programs such as K-SPREAD or by keying it in through K-GRAPH's data editor. The usual data editing facilities are provided, so you can easily add, delete and change sets of data to be charted. Up to 20 data sets can be displayed on any one chart, and up to 80 across all chart types at any one time. A maximum of around 30000 data points can be held in memory on a 512K machine – so this is no toy program! In practice, though, charts get very messy with more than about six data sets displayed, so you'd probably never push the program to its theoretical capacity.

Data points can also be generated from a formula supplied by you, and K-GRAPH has a set of 18 built-in arithmetic and trigonometric functions for this purpose, together with conditional processing facilities. You just define the formula, provide the range and increment for X values, and K-GRAPH does the rest, at least, that's the theory – I had a lot of trouble getting it to work. I found the program's error messages unhelpful, and the instruction booklet inscrutable in this area. Kuma should have included a better explanation of the syntactical rules and practical examples to make this feature more easily usable.

A wide range of chart types can be produced from your data, such as line and scatter graphs, area charts, vertical and horizontal plain bar charts, stacked, overlaid, or three dimensional bar charts, and pie charts. You can flip at will between different chart types for a given set of data, this being as simple as clicking on the appropriate icon. Couldn't be easier.

CHART CUSTOMISATION

Up to four windows can be open at any time, each displaying a different chart. Size and position of a chart within its window is easily changed under mouse control, and you can design your own graph line styles and fill patterns in terms of pixel layout and colour. Point markers may also be used on line graphs, there being a selection of shapes available for this purpose. They can be used without the connecting graph line, and in fact this is how you produce a scatter graph – it's really a line graph without the lines!

Scale points on the X-axis may be individually labelled, permitting the use of non-numeric items such as dates, month names and the like and there is also a general annotation feature which lets you place text anywhere on the graph in a variety of font styles and sizes. You can draw an arrowed line connecting the text with any part of the chart to highlight something of special interest. The text block can be moved at any time, too, and if it has an arrow attached, the line 'rubber-bands' so the head of the arrow remains pointing where it should as you reposition the text. Very neat.

A legend box showing which line or fill pattern represents which data is automatically generated for you. This is based on the names you give to the sets of data, and the lines/fill patterns you defined for use in plotting them. Again, this can be placed anywhere on the chart and can be repositioned at any time without damaging the underlying graphics. By clicking on one of the legends, you are cleverly taken straight into edit mode for the data it represents.

Further options allow you to overlay a grid on the two dimensional charts, to change X and Y origins for certain types of chart, and to choose whether pie charts display percentages or absolute data values against each slice. You can also choose to slide out any one slice to highlight it, although a bug in the review copy made this feature unusable.

If all this isn't enough, you can even save a K-GRAPH chart in DEGAS format and use that package to customise it even more. The possibilities seem endless!

HARD COPY FACILITY

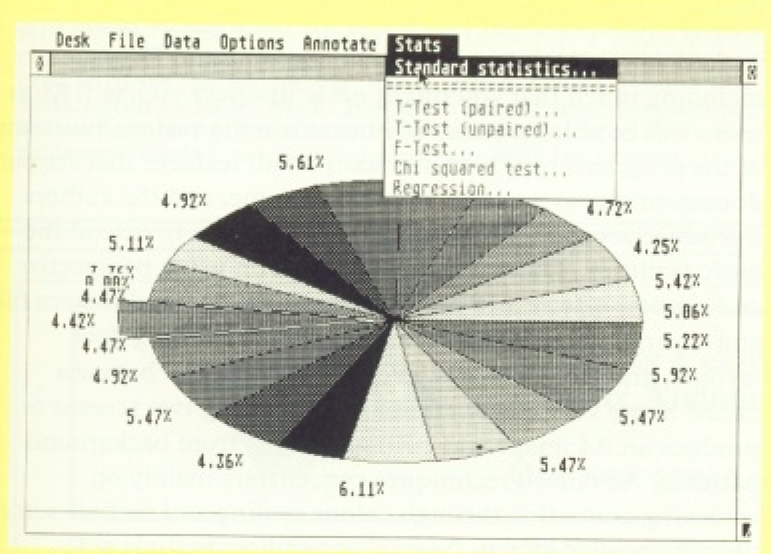
When you've got the chart looking exactly as you want it, you can print it out upright or sideways, and enlarged and/or centralised in the X, Y or both directions. K-Graph displays a representation of the printed page, with a shaded area showing

where your chart will print using the current settings. You can even slide the shaded area around using the mouse, for fine positioning.

It's designed to work with Epson printers. Unfortunately, there seemed to be a problem using it with my Star SG10 Epson compatible, as yet unsolved. I got round it by transferring the file to DEGAS and printed it perfectly from there.

One annoying feature I discovered with printing is that if you accidentally initiate it and you don't have a printer connected, the whole system locks up. The only way out is to reset and reload the program.

K-GRAPH can save data, labels, lines and patterns separately, allowing the flexibility of re-using existing patterns and labels in other charts. This can be done at any time – even when a chart is being displayed. Alternatively, you can choose to save data and labels together, or everything for the complete chart.



If needed, there are also a set of statistical functions, which work on a given set of data. These include mean, standard error, median, upper and lower quartiles, variance, standard deviation, sum of squares, skewness, and kurtosis. And how about the coefficient of variation and quartile coefficient of dispersion, for good measure? Then there are other functions, such as maximum, minimum, and count of data items, and slope and intercept of the line of least squares best fit based on the data points provided. The coefficient of correlation of data points to this line is also calculated.

Other functions require more than one set of data samples, and include paired and unpaired T-tests, F-test, Chi-Squared test, and regression analysis. I personally don't have much use for this sort of thing, but I'm sure there are people out there who use it all the time!

IN PRACTICE....

K-GRAPH works well, apart from the niggles mentioned earlier. If you need a general graphing, charting and statistical package for your ST, and can live with these problems, then go ahead and buy K-GRAPH. It's rather expensive purely for casual home use, but could be of great practical value for business, professional or educational applications. I enjoyed using it, and will continue to do so. What more can I say? •

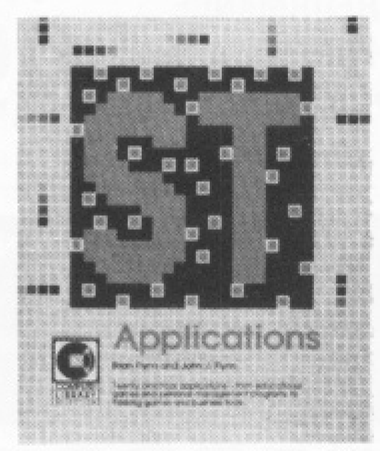
COMPUTE! DO IT AGAIN!



It has to be said that the majority of the ST books to have been published so far, with only one or two notable exceptions, have been re-writes of the manual with, maybe a few new ideas thrown in here and there. Compute!, who have a fine reputation for quality books, have themselves been guilty of this, but now comes the publication of a new series, and a new format which they call the COMPUTE! Library Selection, that looks like being the start of some excellent reading for the ST.

One of the things missing so far for the ST is a collection of type-in listings that helps new users get stuck in with learning just what their new machine can do and the first of the new Compute! books is just that. ST APPLICATIONS is a collection of twenty practical applications that any owner can type in with ST BASIC. The programs range from games of skill to 'household helpers' and on to business, finance and science. All will run on a 520ST or 1040ST in either mono or colour. There are no arcade style games here, most of the games require thought and skill and include such favourites as Knights Errant, Mosaic Puzzles and Checkers. More useful programs are those for calculating loan payments and there is even a spreadsheet! Other, less usual, applications include Chemistry Basics, a Simultaneous Equation Solver and Least-Squares Forecasting and there is even a program for Weather Forecasting! All in all, an unusual collection with some very useful programs that will not only teach you about using your ST but will also provide you with some useful programs.

Another applications guide is the first in a series entitled ST APPLICATIONS GUIDE and this one is subtitled PROGRAMMING IN C. Here you have a guide which shows the elementary C programmer how to use C for many specific ST applications. Chapters include Creating The GEM Envelope, Creating Menus, Dialog Boxes and Graphics, Programming the Sound Chip and others on graphics. The book is full of programming examples illustrating all the aspects of GEM using actual programs such as a fractal program and a program for drawing world maps as examples. All the co-ordinates for the latter are provided in an extensive Appendix! There really is so much in this book that it is hard to know what to mention. There are over 320 pages chocked full of examples and explanations and anyone who works all the way through will have a very good understanding of GEM and programming the ST in general. It does not teach C as such but looks to be the best book so far to explain how to use C to get the best from the ST.



reviewed by Les Ellingham

The final one in this trilogy of new books will appeal to artists and doodlers alike, indeed anyone who has a copy of the Neochrome Sampler (v. 0.5) or Degas. The title is COMPUTE!'s ST ARTIST and the book has 265 pages packed with information about Neochrome and Degas, including much that you might *never* discover yourself! Most users will be able to work out how to use the various functions of the programs but there are many small features that are not documented, particularly with Neochrome, and the authors introduce several tips and tricks to enable you to extend the basic facilities. There is much included on using perspective and shadow effects and defining your own text and pattern fills and several, not so obvious, applications including floor layouts, graphs and charts, even letterheads and business cards! Some very clever effects include using two screens to produce an A4 image and cutting designs from background patterns. Advanced techniques concentrate mainly on achieving animation through colour cycling and include some very impressive effects. Several appendices include a conversion program for Degas/Neo, a glossary and a round up of the art programs available if you need to explore further. All in all a cracking collection of ideas and tips that will enhance your purchase of Degas or turn a 'free' copy of Neochrome into one of the most interesting programs in your collection. If you want to pay a bit more you can also get the book with an accompanying disk which not only includes all of the drawings, programs and routines from the book but also has six extra Degas fonts and four fill patterns plus three screens of Neochrome 'shapes' that can be cut and incorporated into your own drawings. This is one of the few times when the disk actually provides more than is in the book.

All the books are in a new large format of 9" by 7½" in conventional paperback style. There are expensive, as are all books nowadays, but at least they look the part and all three are packed with information to provide value for money.

COMPUTE!'s ST APPLICATIONS by Brian Flynn and John J. Flynn. ISBN 0-87455-067-X. £15.95
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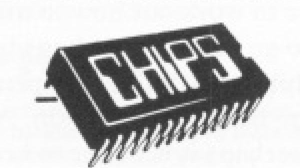
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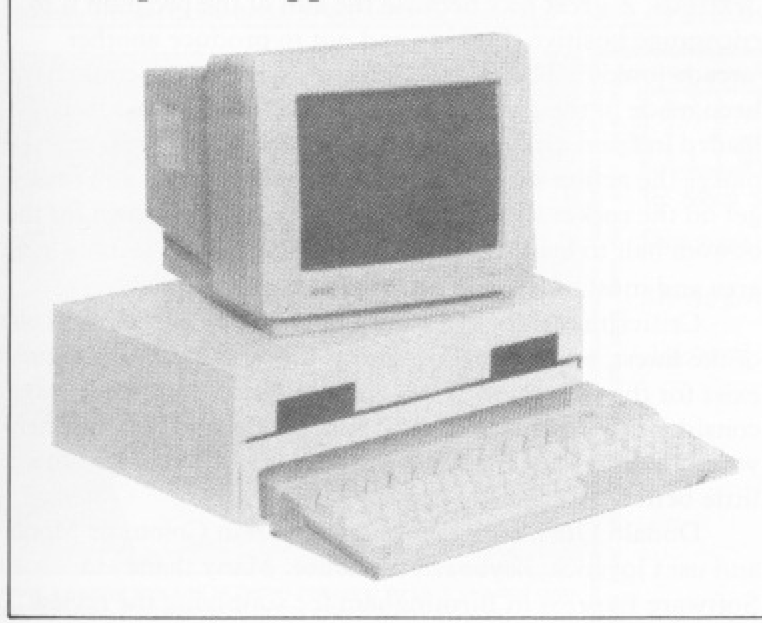

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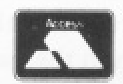
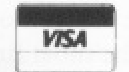


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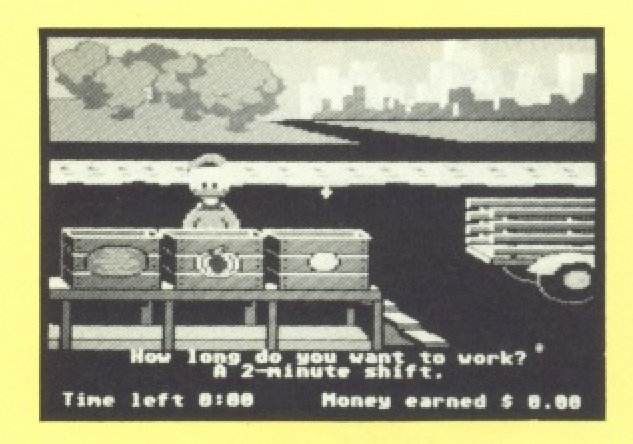
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Donald Duck's Playground
Sierra
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Too clever for Les Ellingham!

'An action packed game about change making for ages 7 to 11'. I hate Donald Duck's Playground! Not that the program is bad, it's just that I am not sure I like the thought of 7 to 11 year olds being smarter than me! Seriously though, in a time when everybody seems to complain about the lack of good educational software, this one is a real cracker (or quacker? Groan!).

The game is designed to teach children the concepts of logical thinking, shape, colour and letter recognition and the use of money in a society that requires you to understand that nothing is for nothing and that hard work brings its rewards. It succeeds admirably in its aims and is packed with a number of well thought out scenarios that must make some impression on any child who plays. As with Winnie The Pooh (reviewed in an earlier issue) the hand of Walt Disney is evident in the understanding of children.

Starting from the beginning, you have the choice of three levels, beginner, intermediate or advanced, but be warned, even the beginners level is not too easy (play it while the children are not looking!). Donald passes through the appropriate gate and emerges in the high street where there are four workplaces in which to earn some money. These are McDuck Airlines, The Produce Market, The Toy Store and Amquack Railroad. Each has a choice of working a shift from 2 minutes upwards but they all feature different skills and will take time to master. At the airport you are a baggage handler and must sort baggage from a conveyor into the appropriate truck for its destination. This involves checking a three letter code on each passing package and recognising the corresponding truck. With the conveyor continually moving it is quite hard! In the Toy Store you must put toys on the shelves by recognising similar toys and placing a ladder so that you can climb up and put the toy in the right place. An additional problem is the train passing by from time to time which, if you are not careful, will dislodge the toys you have put up and so reduce your earnings. The Produce Market has more of an arcade element requiring you to catch produce thrown off the back of a truck and find the right box to put it in. Finally, on the Railroad, you must pick up packages from certain stations and deliver them to others by changing a series of points. A real challenge to logical thinking, this one!

Whichever job you choose, at the end of your shift you go to the Payroll office to pick up what you have earned. The money is counted out in appropriate coins and your total earnings increased. You may now go back and work some more or find somewhere to spend some of those wages!

On the other side of the street are three shops where you have a choice of items to buy. Each item has a stated price and a description which needs to be read carefully because some items are much more useful than others, especially if you want to have the most fun in the park! After choosing the item you want you must pay the shopkeeper, you are not allowed to leave or buy more without settling your debts. Paying involves going up to the till and counting out either the right amount or tending a higher amount and working out how to get the correct change. A nice lesson in paying for what you want and understanding how to count up the right amount or check that you have the right change. Once you have got it right your purchases are automatically delivered to the park. Guess where we are going now?

After all that work, it's about time we had some play, so off to the park. This is the Playground of the title and to get the most fun you will need to have worked hard and bought some of the right things. There are many tantalisingly interesting things in the park but you may not be able to use them without the right accessories. The park lies across a railroad and, all credit to Donald, he stops and looks both ways before crossing but it might have been wiser to have some gates or no railroad rather than encourage children to cross railway lines, however much they stop and look. Anyway there are lots of things to do in the park and many more challenges. You will have to work out how to use most things and will certainly need to go back to the shops to buy more equipment. In all probability you will have spent all of your money and will have to go back to work again. Another lesson, this time in economics, perhaps it is better to keep something back in case you need it?

Donald Duck's Playground will last for a long, long time and with parental guidance cannot fail to have some beneficial influence on a young child. Almost all of the concept and design is excellent but there are one or two criticisms. Certainly I felt that the control of the character is unnecessarily difficult, especially with a mouse, and might well defeat a child that is good at thinking but not necessarily that dextrous. A great pity because the aim of the program is to encourage positive thinking and not to produce another 'arcade junkie'. The other point is that better use could have been made of the graphic power of the ST. Each scene is loaded in from disk, as with other Sierra adventures, and this makes the action extremely slow, especially when you finally get on the rocket slide and have to stop halfway down for the bottom half to load! Donald Duck's Playground is not a huge area and most of it could be loaded in and scrolled.

Criticisms aside, this is probably one of the few, and one of the finest, educational programs filling the gap that seems to exist for the over fives. If you have children, you really should consider buying this. It is fun, educational and may just help your children understand all the complexities of later life a little better.

Donald Duck's Playground will run in Colour or Mono and uses joystick, keyboard or mouse. Many thanks to Software Express in Birmingham for supplying the review copy. •

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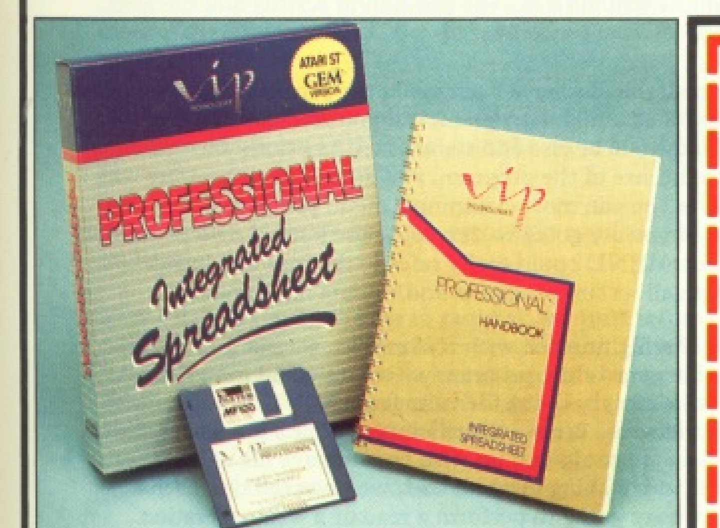
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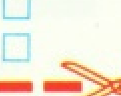
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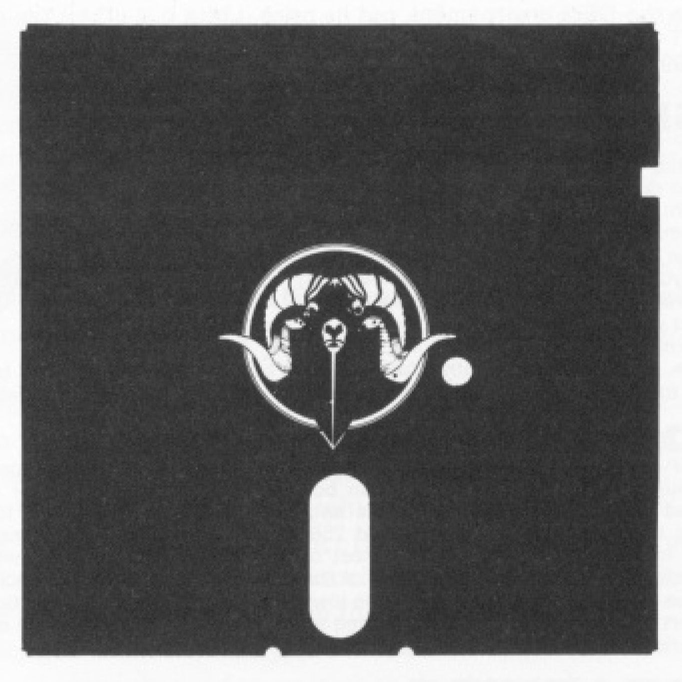


130XE RAMDISK LOADER

The problem with many ramdisk file transfer programs is that they are in machine code which makes them very inflexible and difficult to modify, especially if you haven't got a clue about machine code programming. The accompanying program is written for the most part in Basic and will move selected files and programs to ramdisk at power-up. Being written in Basic means you will be able to alter it to suit your own needs.

The program should be of use to everyone with a 130XE and if you own an 800, the program will still work, but you will have to fit extra memory to hold the files. If you own an 800XL I strongly recommend you read the October 1986 edition of COMPUTE! magazine, which shows you how to create a small ramdisk in the hidden memory.

To use this program, all you need to do is type it in and save it to disk. If you wish you can run it automatically by using DOS 2.5's SETUP.COM file, to create an AUTORUN.SYS file. My advice is to call this program RAMOVE.COM, but you can call it what you wish, just so long as you use the same name in your AUTORUN.SYS file.



by Rob Anthony

Here's a breakdown of the program, with a few ideas on how you can modify it for your own use.

1010 – This line sets up the strings we are going to use for the machine code, and various other bits and pieces required. You can change FILE$ if you wish here to a smaller number if you want to move files of specific size. Say your maximum file size was 4k you could dimension it accordingly. If you want to move lots of files you can increase the number in NAME$. Simply multiply the number of files you want to move by 8. Remember, 8 is the length of a filename less the extender. FILE$ will be reduced in size automatically, so remember the more files you want to move the smaller they will have to be. As it stands FILE$ will move files up to 240 sectors long, which is the largest I have. Also remember the RAMDISK is only so big, so make sure you don't try to move too many files, as the program will stop with an error.

1020 – 1040 – These three lines copy the small machine code program into CIO$, which is the most important part of this program. I got this routine from 'COMPUTE!' many years ago, but I'm afraid I can't remember who is responsible for it – probably Bill Wilkinson.

2020 – 2030 – To move these files, we must know which ones they are, so using IN$ we take this information directly from the directory. If IN$ returns 'FREE' we know we have read all the filenames, so we can go on and load any files we have identified.

2040 – Here we check that the filename we have taken from the directory is in fact a file to be moved.

2050 – 2060 If the test is positive we trim the edges and

2070 – store the result in NAME$.

2080 – Here we make sure that we are not going to try and pack in too many files. If you want to increase the number of files you are going to load, remember to increase the value of X accordingly. If we have all the filenames we can fit, the program will continue below.

3020 – Here we close the directory and make sure we have got some files to move.

3030 – 3050 – This is where we decide how many times we have to perform the load/save routines. X is going to be equal to the number of files in NAME$. After performing the first load/save we increase POS by eight, which indicates the position in NAME$ of the next filename.

3060 – When all the files have been saved the program has completed its job. Here I load a menu program, but you can just stop the program if you wish, or else add some other functions. Remember if you increase the size of the program, you are going to interfere with the size of files you can move, running a menu program keeps your Atari smart. If you are going to develop some kind of data processing program, then MENU could easily refer to the master control program, with all its sub programs and/or data on Ramdisk.

4020 – 4040 – Having finished with IN$ earlier, we can now use it to represent the filename of the program we want to load in to FILE$. These two lines simply take the filename from NAME$, and trim it into a useable filename. We must now empty FILE$ if we have used it before, otherwise we could end up with one massive file of all the other files we are moving. Having done all that, we must tell the machine code whether we are going to perform a read or a write operation.

4050 – Now we can open the disk file for reading, and show what we are moving.

```
EI 1 REM ********************************
OT 2 REM *     130XE RAMDISK LOADER      *
LR 3 REM *            by                 *
AQ 4 REM *        ROB ANTHONY            *
EC 5 REM * ---------------------------- *
IZ 6 REM *  PAGE 6 MAGAZINE - ENGLAND   *
EO 7 REM ********************************
NO 9 REM
VF 10 REM THIS PROGRAM WILL MOVE ANY FILE
      WITH THE EXTENDER ".D8" TO RAMDISK
      TO A MAXIMUM OF 20 FILES
AZ 20 REM
LE 1990 REM *** INITIALISATION ***
IQ 1005 REM
RS 1010 DIM CIO$(39),BUFF$(1016),IN$(20),
   NAME$(161),FILE$(FRE(0)-25)
CC 1020 FOR I=1 TO 39:READ A:CIO$(I,I)=CH
   R$(A):NEXT I
VO 1030 DATA 104,104,104,10,10,10,10,170,
   169,7,157,66,3,104,157,69,3,104,157,68
   ,3,104,157,73,3
SP 1040 DATA 104,157,72,3,32,86,228,132,2
   12,160,0,132,213,96
IL 1050 REM
AU 1060 REM === ENDS INITIALISATION ===
JA 2000 REM *** WHICH FILES ***
IA 2010 REM
EG 2020 OPEN #1,6,0,"D:*.*":TRAP 5020
GS 2030 INPUT #1,IN$:IF IN$(5,8)="FREE" T
   HEN 3020
WP 2040 IF IN$(11,12)<>"D8" THEN 2030
XU 2050 IN$=IN$(3,10)
MQ 2060 IF LEN(IN$)<8 THEN IN$(LEN(IN$)+1
   )=" ":GOTO 2060
OB 2070 NAME$(LEN(NAME$)+1)=IN$
VW 2080 IF X<20 THEN X=X+1:GOTO 2030
IY 2090 REM
PA 2100 REM === ENDS WHICH FILES ===
YJ 3000 REM *** LOAD/SAVE FILE LOOP ***
IB 3010 REM
FU 3020 CLOSE #1:IF NAME$="" THEN 3060
HG 3030 POS=1:FOR LP=1 TO X
CB 3040 GOSUB 4020:POS=POS+8
RL 3050 NEXT LP
TJ 3060 RUN "D:MENU":REM OMIT THIS OR
        CHANGE IT TO RUN A PARTICULAR
        PROGRAM
IT 3070 REM
GW 3080 REM === ENDS PROGRAM ===
EB 4000 REM *** LOAD FILE ROUTINE ***
IC 4010 REM
CF 4020 IN$="D1:":IN$(4)=NAME$(POS,POS+7)
   :FILE$=""
GT 4030 IF IN$(LEN(IN$),LEN(IN$))=" " THE
   N IN$=IN$(1,LEN(IN$)-1):GOTO 4030
FC 4040 IN$(LEN(IN$)+1)=".D8":CIO$(10,10)
   =CHR$(7)
AK 4050 OPEN #1,4,0,IN$:? "Loading ";IN$
GU 4060 BUFF$(1)=",":BUFF$(1016)=",":BUFF
   $(2)=BUFF$:MIS=USR(ADR(CIO$),1,ADR(BUF
   F$),LEN(BUFF$))
DM 4070 BRED=PEEK(40)+256*PEEK(41):BUFF$(
   BRED)=BUFF$(BRED,BRED):FILE$(LEN(FILE$
   )+1)=BUFF$
LU 4080 IF MIS=136 THEN CLOSE #1:GOTO 602
   0:REM FILE NOW LOADED - SAVE IT!
FZ 4090 IF MIS=1 THEN 4060:REM STILL A
        LITTLE MORE TO GET OFF THE DISK
TB 4100 POKE 195,MIS:GOTO 5020:REM SOME-
        THING IS WRONG
IE 4110 REM
DY 4120 REM === ENDS LOAD FILE ===
NH 5000 REM *** ERROR TRAP ***
ID 5010 REM
EH 5020 MIS=PEEK(195):CLOSE #1
YG 5030 ? "ERROR ";MIS;" HAS OCCURRED -":
   ? "PROCESS ABANDONED":POP :STOP
IM 5040 REM
KM 5050 REM === ENDS ERROR TRAP ===
NK 6000 REM *** SAVE FILE ROUTINE ***
IE 6010 REM
MZ 6020 CIO$(10,10)=CHR$(11):IN$(2,2)="8"
SA 6030 OPEN #1,8,0,IN$
OO 6040 OUT=USR(ADR(CIO$),1,ADR(FILE$),LE
   N(FILE$))
DV 6050 CLOSE #1:RETURN
IT 6060 REM
JN 6070 REM === ENDS LISTING ===
```

4060 – Because we are going to use a buffer to store parts of the file, we must fill it up with inverse comma's. We can then call up the machine code and load in the first part of the file. The figure 1 in the arguments refer to the channel we are using, so if you want to use this machine code for some other purpose – say loading and saving data from a database – remember to set this argument accordingly.

4070 – Now we must find out how much data we have read, and this information is stored in locations 40 and 41. Having done this we can trim the length of the buffer accordingly and tag it on to the end of the file.

4080 – 4090 – If MIS equals 136 then we have read all the files, so we can go off and store it on the ramdisk. If it returns 1 then we still have some of the files to pull off the disk, so we go back to line 4060 and get a little more.

4100 – If there are any problems, then MIS will return an error number – so we can POKE that into the error number location, 195, and trap to the error routines.

5020 – 5030 – Here we have the error trap routine, which is fairly self explanatory.

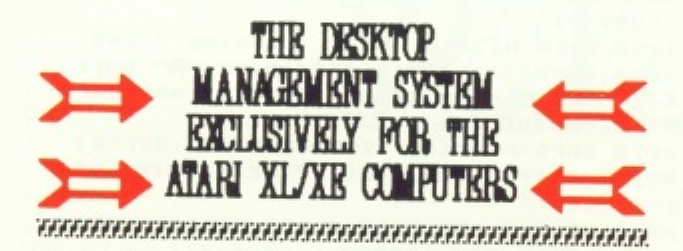
6020 – Before saving the file to ramdisk we must inform the machine code we are going to perform a write operation. Then we change IN$ from drive 1 to drive 8. If you have changed the ramdisk drive number by altering your DOS, remember to change this number accordingly.
6030 – Now open the ramdisk file for a write operation.

6040 – Using the machine code we now write the file to Ramdisk.

6050 – Now we can close the file, and go and look for some more.

6070 – Phew!





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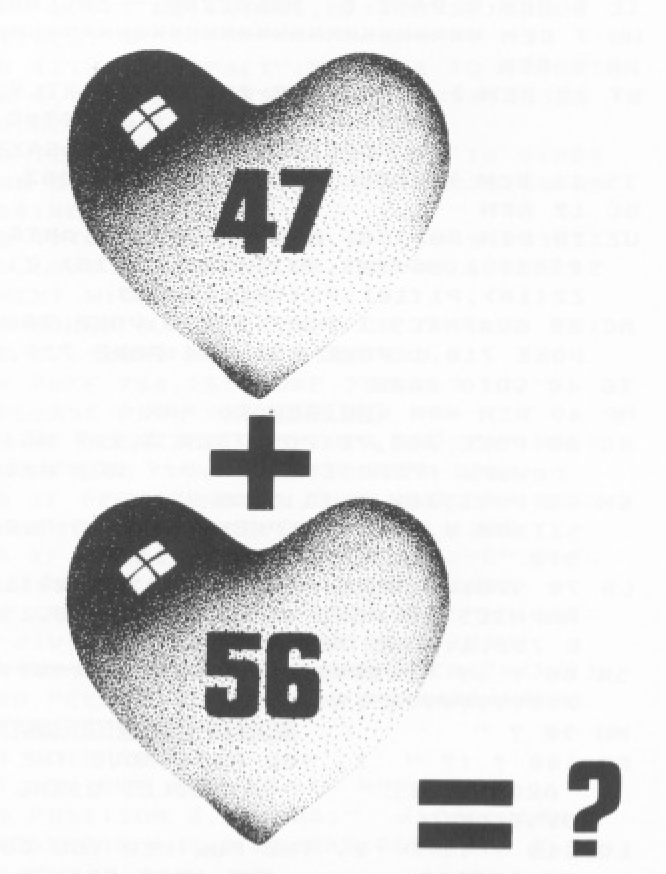
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MOST HEART MATHS



by Peter Ohlmeyer

Teach your children or accept a challenge with this multi-level maths program

Since I have never been too impressed with the few mathematical games for children that I had seen for the Atari I had been planning such a game for some time but it was not until the recent birthday of the eight year old daughter of one of my friends that I made up my mind how to develop what I felt to be the right combination of learning mathematics and having a little gaming fun. MOST-HEART MATHEMATICS is the result of my efforts. I cannot judge myself whether I have programmed something that meets the demand expressed above, however, the children that have played it so far were quite pleased with it and went on playing it again and again.

You might be intrigued by the title of the program and I don't blame you! This is because the title and all the prompts of the game were originally written in German and nothing else came to my mind as an English version of the title than 'Most-heart mathematics', because I wanted to save time and the title had to fit into the space provided for the German version. I don't even know whether the title is English or whether it is nonsense!

Anyway, type it in and play it and you will find out that it has quite a lot to do with mathematics and even more to do with hearts which, because it is written for children, play a very important role.

WHAT DOES THE PROGRAM DO?

Firstly, you have the choice between addition, subtraction, multiplication, and division. Secondly, you are asked to decide at which level – ranging from easy to extra in three variations – that you would like to your children's arithmetic skills to be improved.

According to your choices you are presented with three sets of six arithmetical problems. The answers are typed in on the keyboard but will not appear on screen until RETURN is pressed. It is important here to watch the keyboard carefully to make sure you have typed the answer you intended. When all six answers have been entered they are checked and wrong or right answers are marked accordingly. For every right answer, the ATARI displays – what else? – a nice heart. Wrong answers are indicated differently. If there are any incorrect results you are asked whether you would like to see the correct answers before proceeding.

Once all eighteen problems have been solved your total score is displayed. If you have reached a certain percentage of the total score possible, you have the choice between either going back to the next set of arithmetical problems or playing a little reward game instead.

That's all there is to it. The program was originally written without the time having an influence upon the scoring but I found that this feature makes the program interesting even for adults who mainly over-estimate their arithmetical skills. Every body is so used to using their 'Texas-Instruments' when calculating 4 × 10 and assumes that the answer really is 39.99999!

Try Most Heart Mathematics yourself and play some rounds against an adult or even against your children and very soon you will be under time pressure and will make mistakes typing in the results that will reduce your scores considerably. The best choice for adults to start with is DIVISION at level 3:EXTRA. Have fun!

In conclusion I should point out that as the program was written for children there are many sounds in it that may not attract adults. I am sure that you will easily find out which GOSUB's you have to omit in order not to be disturbed by foolish sounds when solving some of the easy or the 'hearty' arithmetical problems.

Listing overleaf

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WO 1 REM ******************************
OU 2 REM *        PETER OHLMEYER       *
FC 3 REM *   MOST-HEART MATHEMATICS!   *
AR 4 REM *        AMMAN - JORDAN        *
SR 5 REM * -------------------------- *
IE 6 REM * PAGE 6  MAGAZINE - ENGLAND *
WU 7 REM ******************************
NN 8 REM
NT 10 REM > LINES 170-290 ARE PARTLY
          ALTERATIONS OF A LISTING BY
          A.PERSIDSKY, ANTIC MAGAZINE
IS 11 REM > (VOL.2-NO.7 - OCT. 1983
BC 12 REM
UZ 20 DIM RA$(16),RW$(1),D$(16),ANT$(4),O
   P$(1),LOB$(18),TIT$(18),RI(18),Z1(18),
   Z2(18),P1(18),P2(18),F3(18)
HC 30 GRAPHICS 1:POKE 559,0:POKE 708,118:
   POKE 710,1:POKE 709,214:POKE 712,1
IG 40 GOTO 2000
MP 49 REM *** THE REWARD ***
KQ 50 POKE 709,70:POSITION 3,2:? #6;" the
    reward !":POSITION 7,9:? #6;"peters"
GM 60 POSITION 5,11:? #6;"           ":PO
   SITION 4,13:? #6;"REWARDSNAKE!":GOSUB
   970
LH 70 STOT=0:SE=0:POKE 82,0:? CHR$(125):G
   RAPHICS 16:POKE 559,0:POKE 710,192:POK
   E 752,1:POKE 764,255
SN 80 ? :? "♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥
   ♥♥♥♥♥♥♥♥♥♥♥♥":?
MU 90 ? "              PETERS REWARD SNAKE"
DQ 100 ? :? "  1. YOU MUST MOVE THE SNAKE
    AROUND ALL       OBSTACLES USING THE J
   OYSTICK!"
LQ 110 ? :? "  2. THE FURTHER YOU COME, T
   HE BETTER!       THE MORE POINTS YOU S
   CORE!"
KI 120 ? :? "  3. AFTER THREE LAPS WITH T
   HE SNAKE          YOU HAVE TO RETURN TO
    CALCULATION!"
VO 130 ? :? "  4. THE SNAKE MOVES FASTER
   AFTER EACH       LAP YOU'VE FINISHED!"
JW 140 ? :? "  5. AND NOW HAVE MUCH FUN A
   ND - START!"
NG 150 ? :? "♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥
   ♥♥♥♥♥♥♥♥♥♥♥♥♥":POKE 559,34
XV 160 IF PEEK(53279)<>6 THEN 160
OX 170 ? CHR$(125):POKE 752,1:RN=1
TS 180 S=PEEK(88)+256*PEEK(89)
ZS 190 POKE 710,192:AA=S+460
VX 200 ST=STICK(0):?
DM 210 POKE AA,64:AA=AA-1*(ST=11)+1*(ST=7
   )
MU 220 R=S+880+INT(40*RND(1)):POKE R,72:P
   OKE R+1,74
GI 230 SP=SP+1:IF SP>25 THEN SP=1:SD=SD+1
   :? SD*10:SOUND 0,20,10,15:SOUND 0,0,0,
   0
OP 240 IF SD>8 THEN POKE R+10,80
EY 250 IF SD>12 THEN POKE R+7,84
IT 260 IF SD>16 THEN FOR W=S+880 TO S+919
   :POKE W,64:NEXT W:GOTO 310
QI 270 IF PEEK(AA+40)<>0 THEN 300
VY 280 POKE AA+40,0
ZR 290 FOR W=0 TO (3-RN)*10:NEXT W:GOTO 2
   00
PJ 300 GOSUB 950:SE=SD*10*RN:? "           Y
   OU SCORED ";SE;" POINTS!
       ONE MORE ROUND - (Y/N)?":GOTO 320
KB 310 GOSUB 900:SE=SD*10*RN:? "       THIS
    IS THE GOAL: ";SE;" POINTS!
       ONE MORE ROUND - (Y/N)?"
XW 320 IF PEEK(764)<>43 AND PEEK(764)<>35
    THEN 320
DH 330 IF PEEK(764)=35 THEN STOT=STOT+SE:
   SP=1:GOTO 360
SL 340 POKE 764,255:RN=RN+1:STOT=STOT+SE:
   IF RN>3 THEN 360
XX 350 SP=0:SD=0:? CHR$(125):GOTO 180
OA 360 ? CHR$(125):? :FOR W=1 TO 3:? "♥♥♥
   ♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥"
   :NEXT W:IF SP=1 THEN SP=0:GOTO 380
WM 370 ? :? "        YOU DID ALREADY 3 ROUN
   DS!!"
PP 380 ? "      YOUR TOTAL SCORE IS ";STOT;
   " POINTS"
PA 390 ? :? :? :FOR W=1 TO 3:? "♥♥♥♥♥♥♥♥♥
   ♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥":NEXT
   W:FOR W=1 TO 400:NEXT W:GOTO 1500
FA 399 REM *** MAIN LOOP ***
XY 400 DP=1:SC=0:RD=1:ERG=0
TG 410 F1=INT(RND(0)*Z1(NR)+1):F2=INT(RND
   (0)*Z2(NR)+1)
VC 420 IF NR>9 THEN FD=F1*F2:F3(DP)=FD/F2
   :F1=FD:OP$=CHR$(26+128):GOTO 470
UK 430 IF NR>3 AND NR<7 THEN IF F2>F1 THE
   N 410
TM 440 IF RW$="A" THEN F3(DP)=F1+F2:OP$=C
   HR$(11+128):GOTO 470
ZT 450 IF RW$="B" THEN F3(DP)=F1-F2:OP$=C
   HR$(13+128):GOTO 470
GE 460 IF RW$="C" THEN F3(DP)=F1*F2:OP$=C
   HR$(6+128)
YJ 470 IF DP>9 THEN POSITION P1(DP)-4,P2(
   DP)-1:? #6;CHR$(145);CHR$(144+(DP-10))
   :GOTO 500
XD 480 IF DP>9 THEN 500
KN 490 POSITION P1(DP)-4,P2(DP)-1:? #6;CH
   R$(144+DP)
UX 500 POSITION P1(DP)-LEN(STR$(F1))+1,P2
   (DP):? #6;F1
HR 510 POSITION P1(DP)-LEN(STR$(F2)),P2(D
   P)+1:? #6;OP$;F2
SO 520 POSITION P1(DP)-1,P2(DP)+3:? #6;"
   ?":GOSUB 900:POKE 764,255
AO 530 ? :? " TYPE IN YOUR RESULT AND ---
   RETURN
      "
DD 540 OPEN #4,12,0,"K:"
NC 550 INPUT #4;ANT$:CLOSE #4
MY 560 TRAP 540:RI(DP)=VAL(ANT$)
MO 570 POSITION P1(DP)-LEN(STR$(RI(DP)))+
   1,P2(DP)+3:? #6;ANT$:FOR W=1 TO 100:NE
   XT W
DU 580 IF RD=6 THEN GOSUB 1800:? :? "
      NOW LET'S CHECK IT ALL!":FOR W=1 TO
    100:NEXT W:GOTO 600
OZ 590 RD=RD+1:DP=DP+1:GOTO 410
LS 600 FOR X=DP-5 TO DP
CF 610 IF F3(X)=RI(X) THEN ERG=ERG+1:GOTO
    630
EG 620 POSITION X,18:? #6;CHR$(4):POSITIO
   N P1(X)-4,P2(X)+3:? #6;"w":GOSUB 950:G
   OTO 640
WL 630 SC=SC+10:POSITION X,18:? #6;CHR$(1
   31):POSITION P1(X)-4,P2(X)+3:? #6;"R":
   GOSUB 910
FR 640 FOR W=1 TO 30:NEXT W:NEXT X:IF ERG
   <6 THEN GOSUB 1700
TJ 645 ? :? "        SHALL WE CONTINUE - STA
   RT!
                                  "
CF 650 IF PEEK(53279)<>6 THEN 650
AL 660 IF DP=18 THEN ? :? "


       ":PZ=INT((SC/180)*100):GOTO 700
MK 670 RD=1:DP=DP+1:ERG=0:GOTO 1400
SC 699 REM *** CALCULATION RESULTS ***
UF 700 POKE 708,70:FSC=SC*DIF:POSITION 1,
   3:? #6;"  ?were you good? ":POSITION 0
   ,4:? #6;"####################"
ND 710 FOR W=5 TO 16:POSITION 0,W:? #6;"#
                     #":NEXT W:POSITION 9
   ,7:? #6;"you":POSITION 9,9
EI 720 ? #6;"got":POSITION 5,11:? #6;FSC;
   " points":POSITION 4,13:? #6;"(";PZ;"
   percent)"
KX 730 IF SC>160 THEN LOB$="       super
       ":GOTO 790
IR 740 IF SC>140 THEN LOB$="     very good
       ":GOTO 790
KN 750 IF SC>120 THEN LOB$="        good
       ":GOTO 790
GG 760 IF SC>100 THEN LOB$="       medium
       ":GOTO 790
QE 770 IF SC>80 THEN LOB$="      too bad
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     ":GOTO 790
GN 780 LOB$="     miserable      "
VH 790 FOR W=1 TO 8:POSITION 1,18:? #6;LO
   B$:FOR WW=1 TO 30:SOUND 0,5*WW,10,10:N
   EXT WW:POKE 711,12+16*W
CO 800 NEXT W:POKE 711,214:SOUND 0,0,0,0:
   TIT$="                    ":IF SC>130
   THEN POKE 764,255:GOTO 840
SG 810 ? :? "           ONCE AGAIN ? - (Y/N
   )?              "
GS 820 IF PEEK(764)<>43 AND PEEK(764)<>35
    THEN 820
DP 825 IF PEEK(764)=35 THEN AUS=1:GOTO 15
   00
IH 830 GOSUB 870:POKE 708,214:POKE 709,11
   8:POKE 711,70:GOTO 1130
NE 840 ? :? "   DO YOU WANT A REWARD - (Y
   /N)?"
MG 850 IF PEEK(764)<>43 AND PEEK(764)<>35
    THEN 850
KL 860 IF PEEK(764)=43 THEN GOSUB 870:GOT
   O 50
YR 865 GOSUB 870:GOTO 1130
NU 870 POSITION 1,1:? #6;TIT$:POSITION 1,
   2:? #6;TIT$
XY 880 POSITION 9,7:? #6;"  ":POSITION 1,
   3:? #6;TIT$:POSITION 1,17:? #6;TIT$:PO
   SITION 1,18:? #6;TIT$
OZ 890 ? :? "
                               ":DP=0:RETURN
LC 899 REM *** ADD SOME SOUND ***
AF 900 FOR TON=1 TO 25:SOUND 0,10*TON,10,
   10:SOUND 1,8*TON,10,10:NEXT TON:SOUND
   0,0,0,0:SOUND 1,0,0,0:RETURN
XJ 910 RESTORE 940
HO 920 READ B:IF B=256 THEN SOUND 0,0,0,0
   :RETURN
JB 930 SOUND 0,B,10,10:FOR W=1 TO 10:NEXT
    W:GOTO 920
VU 940 DATA 53,64,60,53,64,81,256
MW 950 FOR TON=15 TO 0 STEP -1:SOUND 0,5,
   0,TON:FOR W=1 TO 3:NEXT W:NEXT TON
RR 960 SOUND 0,0,0,0:RETURN
MB 970 FOR W=500 TO 1 STEP -2:SOUND 0,W/2
   ,10,10:SOUND 1,W,14,14:POKE 708,W/2:NE
   XT W:SOUND 0,0,0,0:SOUND 1,0,0,0
WH 980 POKE 708,118:RETURN
QP 999 REM *** TITEL ***
DM 1000 FOR W=0 TO 19:POSITION W,0:? #6;"
   #":POSITION W,4:? #6;"#":POSITION W,19
   :? #6;"#":POSITION 0,W:? #6;"#"
OW 1010 POSITION 19,W:? #6;"#":NEXT W
IB 1020 IF SR=1 THEN SR=0:RETURN
KZ 1030 POSITION 7,8:? #6;"########":FOR W=
   5 TO 14:POSITION W,11:? #6;CHR$(3):NEX
   T W
OS 1040 POSITION 4,13:? #6;"000000000000"
   :POKE 559,34
JE 1050 DIM NAM$(28):NAM$="
   peter ohlmeyer"
HW 1060 FOR W=1 TO 15:POSITION 3,2:? #6;N
   AM$(W,W+13):SOUND 0,250-W*14,10,14:SOU
   ND 1,W*14,10,12:FOR W1=1 TO 15:NEXT W1
YD 1070 NEXT W:SOUND 0,0,0,0:SOUND 1,0,0,
   0:FOR W=1 TO 50:NEXT W
TG 1080 POSITION 7,8:? #6;"peters":FOR W=
   1 TO 50:NEXT W
SH 1090 TIT$="most-hearty":FOR W=1 TO 10:
   POSITION 5,11:? #6;TIT$(1,W):TON=20:GO
   SUB 1120:NEXT W:FOR WW=1 TO 50:NEXT WW
TF 1100 TIT$="mathematics!":FOR W=1 TO 12
   :POSITION 4,13:? #6;TIT$(1,W):TON=30:G
   OSUB 1120:NEXT W
ZV 1110 GOSUB 970:GOTO 1130
FU 1120 SOUND 0,TON,12,14:FOR TT=1 TO 10:
   NEXT TT:SOUND 0,0,0,0:RETURN
VX 1129 REM *** WHICH ONE ***
DR 1130 POKE 708,214:POSITION 3,2:? #6;"p
   lease choose! ":POSITION 6,8:? #6;"
        ":POSITION 9,7:? #6;"     "
IM 1140 POSITION 4,9:? #6;"a=+++++++++  "
   :POSITION 4,11:? #6;"b=---------   ":PO
   SITION 3,13:? #6;" c=&&&&&&&&&  "
XE 1150 POSITION 4,15:? #6;"d=::::::":POK
   E 709,118:FOR W=1 TO 100:NEXT W
RR 1160 TIT$="addition ":FOR W=1 TO 9:POS
   ITION 6,9:? #6;TIT$(1,W):TON=50:GOSUB
   1200:NEXT W
OW 1170 TIT$="subtract":FOR W=1 TO 8:POSI
   TION 6,11:? #6;TIT$(1,W):TON=60:GOSUB
   1200:NEXT W
SE 1180 TIT$="multiply ":FOR W=1 TO 9:POS
   ITION 6,13:? #6;TIT$(1,W):TON=70:GOSUB
    1200:NEXT W
VE 1190 TIT$="divide":FOR W=1 TO 6:POSITI
   ON 6,15:? #6;TIT$(1,W):TON=80:GOSUB 12
   00:NEXT W:GOTO 1210
AU 1200 SOUND 0,TON,10,10:FOR TT=1 TO 10:
   NEXT TT:SOUND 0,0,0,0:RETURN
XD 1210 POKE 764,255:POKE 752,1:? :? "
     PLEASE PUSH ONE LETTER!          "
OZ 1220 IF PEEK(764)=63 THEN RW$="A":RA$=
   "a-addition ":RF=0:ZD=0:GOTO 1300
OF 1230 IF PEEK(764)=21 THEN RW$="B":RA$=
   "b-substract":RF=3:ZD=0:GOTO 1300
SI 1240 IF PEEK(764)=18 THEN RW$="C":RA$=
   "c-multiply ":RF=6:ZD=0:GOTO 1300
WN 1250 IF PEEK(764)=58 THEN RW$="D":RA$=
   " d-divide  ":RF=9:ZD=1:GOTO 1300
JD 1260 IF PEEK(764)<>63 AND PEEK(764)<>1
   8 AND PEEK(764)<>21 AND PEEK(764)<>58
   THEN 1220
PL 1270 GOTO 1220
KA 1299 REM *** DIFFICULTY ***
EZ 1300 POSITION 3,2:? #6;"  difficulty
    ":POSITION 4,8:? #6;RA$:POSITION 3,9:
   ? #6;"           "
WQ 1310 POSITION 4,11:? #6;"  1-easy    ":
   POSITION 4,13:? #6;"  2-medium    ":POS
   ITION 4,15:? #6;"  3-extra  "
KQ 1320 POKE 764,255:? :? "          PUSH
   ONE NUMBER!             "
PL 1330 IF PEEK(764)=31 THEN DIF=1:D$="
     easy      ":GOTO 1380
OP 1340 IF PEEK(764)=30 THEN DIF=2:D$="
     medium    ":GOTO 1380
BQ 1350 IF PEEK(764)=26 THEN DIF=3:D$="
    extra      ":GOTO 1380
HQ 1360 IF PEEK(764)<>31 AND PEEK(764)<>3
   0 AND PEEK(764)<>26 THEN 1330
QM 1370 GOTO 1330
WG 1380 NR=RF+DIF:LIM=4*DIF
DT 1390 ? :? "


    ":FOR W=1 TO 100:NEXT W
XH 1399 REM *** PLAYFIELD ***
PP 1400 POKE 708,8:POSITION 4+ZD,1:? #6;C
   HR$(145);CHR$(152);CHR$(134)
KY 1410 IF RW$="D" THEN POSITION 8,1:? #6
   ;RA$(4,11):POSITION 3,2:? #6;D$:GOTO 1
   430
MI 1420 POSITION 7,1:? #6;RA$(3,11):POSIT
   ION 3,2:? #6;D$
GV 1430 FOR W=1 TO 18:POSITION W,3:? #6;"
   #":NEXT W:FOR W=4 TO 9:POSITION 0,W:?
   #6;"%%%%%%#%%%%%%#%%%%%%":NEXT W
MI 1440 FOR W=1 TO 18:POSITION W,10:? #6;
   "#":NEXT W
SF 1450 FOR W=11 TO 16:POSITION 0,W:? #6;
   "%%%%%%#%%%%%%#%%%%%%":NEXT W
ES 1460 FOR W=1 TO 18:POSITION W,17:? #6;
   "#":NEXT W:POKE 18,0:POKE 19,0
ZG 1470 FOR W=5 TO 14:POSITION W,19:? #6;
   CHR$(133):NEXT W
NL 1480 IF DP>1 THEN 410
PI 1490 GOTO 400
KD 1499 REM *** FINAL RESULT ***
SJ 1500 ? "K":POKE 82,2:POKE 752,1:GRAPHI
   CS 1:POKE 710,1:POKE 709,214:POKE 756,
   A:POKE 764,255
FF 1510 SR=1:GOSUB 1000:POKE 752,1:POSITI
   ON 4,2:? #6;"final score!":POSITION 4,
   9:? #6;"math's: "
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continued on page 63

Contact

HELP WANTED

HELP!: Can you convert the Coldump option on PAGE 6's Mandlebrot Set disk DS#4 to work on my 1029? Please! Thanks and a token offered. J.D. Collins, 92, Grove Hill, London, E18 2HZ. Tel. 01 989 1277

PEN PALS

PEN PALS WANTED: Anywhere in the world to swap hints, tips etc. All letters will be answered. I have an Atari 800XL, 410 recorder and 1050 disk drive. Please write to Vic Terry, 116, Dunlop Point, West Silvertown, London, E16 2AJ

FROM HOLLAND: I would like to get in touch with users all over the world. I have an 800XL and a 1050 disk drive. Please write to Asing Ku, Arnhemseweg 9, 3811 NN Amersfoort, Holland

FROM PORTUGAL: To all proud owners of the best 8-bit computer ever made! I am a Portuguese owner who would like to contact other users and exchange information on the Atari. I own an 800XL, 1050 disk drive and 1010 recorder. You can write to Antonio Jose Mendes Dos Santos, No 41, Lauradio, 2830 Barreiro, Portugal

HELP!: I am a heavy metal Atari joystick freak and adventure maniac. Please write to me. Disk or cassette. Write to John O'Neill, 23, Mountain View Park, Rathfarnham, Dublin 14, Ireland.

PEN PALS WANTED: I have a 520STM and a 130XE with a disk drive. Please write. All letters answered. J.P. Marshall, 88, Southchurch Court, Clifton Estate, Nottingham, NG11 8HS

OUTER SPACE?: I am scouring the Milky Way galaxy to swap hints, tips and other such matters. Only Earth dudes will receive a reply, no E.T.'s. Mr P.J. Coulson, 207 Harrowby Lane, Grantham, Lincs. NG31 9HG, U.K. EARTH

FOR SALE

850 INTERFACE: In mint condition £75 o.n.o. Modular Technology 5021 modem, 300 baud full duplex, upgraded to 1200 baud full duplex as well (switchable) £200 o.n.o. Telephone Paul on 0602 817919, evenings

MAGAZINES: lots of Atari magazines for sale including early issues. PAGE 6, Monitor, Atari User. Please phone with offer. Will sell separately. John Parkinson. Tel. 01 397 4406

800 SYSTEM: Atari 800 (48k), BASIC cartridge and manuals (all as new) £45. Atari Assembler/Editor cart. and manual £15. U.S. Rev. B OS card for 800 (not suitable for cassette users) £5. Derryck Croker 0923 673719 (Watford)

FOR SALE: Crofton B&W TV camera £75. Fastchip ROM for the 400/800 £12. Speech Synth for 6502 micros £29. Original cassette adventure games £3.50 each. Tel. R.W. Hearn on 0502 66026

WS4000 MODEM: Miracle Technology WS4000 Modem. Brand new, still in box, never opened. My wife bought me one for my birthday, little did she know there was already one on its way!! £150. Please contact Paul Weakley. Tel. 0934 414228 (8.30 – 5.30) or 0934 518400 (after 6.00 p.m.)

1029 PRINTER: Almost as new. I am also searching for Pen Pals for the 8 bitters. Please write to me. Yves Talboom, Lindenstraat 19, 2650 Boom, Belgium

ANALOG MAGAZINE: Mint condition and bound. Editions 11, 12, 14, 15, 16, 17, 18, 20 to 46 inclusive (33 issues) plus ANALOG Compendium covering the best from issues 1 to 10. Original cost over £100. First offer of £50 secures (buyer collects). P.J. Wolski. Tel. 0245 441258 (Chelmsford, Essex)

COMPLETE SYSTEM: Atari 800 48k computer, 1050 disk drive, 1027 printer, 410 recorder (original manuals/boxes), 2 joysticks, Visicalc, AtariWriter and much other software. PAGE 6, Monitor, Atari User, YOUR COMPUTER and other books, dust covers. £250 the lot or will split. Buyer collects. Tel. Peter Ingle, (Hastings) 0424 720321

SF354 DISK DRIVE: Almost new, £85, 810 disk drive £90. Ultimon and 80 column chips for XE, £65. All back issues of Analog/Antic, offers. Tel. Ewen Bruce on 031 557 3311

SYSTEM FOR SALE: 800XL, 1050 disk drive and 410 recorder, all boxed and complete with XMM801 printer, all with manuals. Touch Tablet, Trakball, 2 Atari joysticks, complete set of PAGE 6 public domain disks 1 – 44, books and magazines. Many cassette games, disk and ROMs (including Ass/Editor). All for £399 o.n.o. Call Alan on 0344 56814 after 6 p.m. Can deliver in South England.

SYSTEM FOR SALE: Atari 800 computer, 1010 cassette, 1020 printer, lightpen and software, joystick, lots of games. Complete with all manuals, transformers etc. Please write for full details. Gareth Martin, 8, Springfield, Blackhorse Avenue, Dublin 7, Ireland

XL SYSTEM: Atari 800XL, 1010 recorder, 1050 disk drive with US Doubler, 1027 printer, Touch Tablet, business and games software. £275 Tel. 04446 44788 (Sussex)

ST FOR SALE: Atari 520STFM complete with internal 1 meg drive and 46 disks, microswitch joystick. Excellent condition, still under guarantee with boxes, bags and Centronics printer lead. Must be seen to be appreciated. Only £400. Tel. 021 328 4980, ask for Laurence.

MAGS AND BOOKS: Your Atari Computer £7. Atari Basic £5. Complete set of Atari User magazines. Offers to Sheffield 461430 (evenings)

MAGAZINE BACK ISSUES: PAGE 6 issues 3 to 18, Monitor 4 to 12, I/O magazine 2 to 5. What are they worth? Tel. 0245 72572 after 6 p.m.

MONITOR FOR ST: Hantarex HX 12" green screen which runs from the RGB output of a 520ST. Very clear medium resolution display and ideal for word processing (includes connecting lead worth £15!) Ring 01 771 9115 after 5.30 p.m.

FOR SALE: 800XL, 810 disk drive, 1010 recorder, joystick, books, Atari User (every issue to date), computer desk, some cassettes and disks. All in good working order. Reason for sale - 'need the brass'. All for £150 o.n.o. (Would consider separating). Tel. Preston 632626 ask for Bob.

FOR SALE: Atari 800XL with all leads £30. Atari disk drive 1050 with leads, DOS 2.5, 3.0 £70. Phone Steve on 0734 582143

SF354 ST DISK DRIVE: For sale, as new. Ideal second drive on STFM or 1040ST. £80 or offers. Mark Hutchinson Tel. 0232 621221.

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PAGE 6: Wanted – back issues 1 to 9, also Gyruss. Please write with price. William Oakley, 60, Seaton Street, Bradford, Yorkshire, BD3 9DP

CLUBS

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MOST HEART MATHS continued

```
JD 1520 POSITION 4,11:? #6;"snake:":IF FS
   C>999 THEN PR1=0:GOTO 1550
PY 1530 IF FSC>99 THEN PR1=1:GOTO 1550
RM 1540 PR1=2
PU 1550 POSITION 12+PR1,9:? #6;FSC:IF STO
   T>99 THEN PR2=0:GOTO 1580
RS 1560 IF STOT>9 THEN PR2=1:GOTO 1580
SD 1570 PR2=2
RF 1580 POSITION 13+PR2,11:? #6;STOT:STOT
   =STOT+FSC:POSITION 9+PR-1,15:? #6;STOT
HV 1590 IF AUS=1 THEN AUS=0:FOR W=1 TO 50
   0:NEXT W:POSITION 11,9:? #6;"      ":GO
   TO 1650
XA 1600 GOSUB 970:? "   DO YOU WANT TO CO
   NTINUE - (Y/N)?"
QM 1610 IF PEEK(764)<>43 AND PEEK(764)<>3
   5 THEN 1610
KW 1620 IF PEEK(764)=43 THEN FSC=0:? :? :
   ? "
    ":GOTO 1130
PT 1630 IF PEEK(764)=35 THEN 1650
RG 1640 GOTO 1620
UU 1650 ? :? " UNTIL NEXT TIME - UNTIL NE
   XT TIME!                  "
FT 1660 POSITION 3,2:? #6;"   bye bye!
    "
AV 1670 FOR W=8 TO 13:POSITION 2,W:? #6;"
   until next time!":NEXT W:GOSUB 970
US 1680 GOTO 1680
VJ 1699 REM *** CORRECT RESULTS ***
DY 1700 ? :? "   WOULD YOU LIKE TO SEE TH
   E CORRECT     RESULTS - (Y/N)?
         "
SJ 1710 IF PEEK(764)<>43 AND PEEK(764)<>3
   5 THEN 1710
ZE 1720 IF PEEK(764)=35 THEN RETURN
IT 1730 FOR X=DP-5 TO DP
SP 1740 IF F3(X)<>RI(X) THEN POSITION P1(
   X)-LEN(STR$(F3(X)))+1,P2(X)+4:? #6;F3(
   X):GOSUB 950
JN 1750 NEXT X:POKE 764,255:RETURN
UT 1799 REM *** TIME FACTOR ***
ID 1800 T1=PEEK(20):T2=PEEK(19)
HI 1810 SEC=INT((T2*4.267)+(T1/60)):TIM=T
   IM+SEC
KN 1820 POSITION 6,19:? #6;"time: ";TIM
RT 1830 IF DP<18 THEN RETURN
US 1840 FAC=INT((TIM/18)*10)/10:SCF=INT((
   LIM/FAC)*10)/10
EU 1850 TIM=0:RETURN
DR 1999 REM *** INITIALIZING ***
HY 2000 A=PEEK(106)-8:NCB=A*256:POKE 204,
   A:POKE 206,224
HC 2010 DIM CHM$(20):RESTORE 2050:FOR X=1
    TO 20:READ B:CHM$(X)=CHR$(B):NEXT X
MS 2020 Q=USR(ADR(CHM$)):FOR X=NCB+3*8 TO
    NCB+7*8-1:READ B:POKE X,B:NEXT X
NA 2030 RESTORE 2090:FOR X=1 TO 12:READ D
   A,DB:Z1(X)=DA:Z2(X)=DB:NEXT X
KO 2040 FOR X=1 TO 18:READ DA,DB:P1(X)=DA
   :P2(X)=DB:NEXT X:POKE 756,A:GOTO 1000
YO 2050 DATA 104,162,4,160,0,177,205,145,
   203,200,208,249,230,206,230,204,202,20
   8,242,96
OX 2060 DATA 54,127,127,62,62,28,8,0
US 2070 DATA 6,12,24,60,24,48,96,0
MK 2080 DATA 255,255,255,255,255,255,255,
   255
RN 2085 DATA 0,0,36,24,24,36,0,0
WG 2090 DATA 10,10,60,40,600,400,10,10,10
   0,90,1000,800,10,10,20,10,20,20,10,10,
   20,10,30,30
MZ 2100 DATA 4,5,11,5,18,5,4,12,11,12,18,
   12,4,5,11,5,18,5,4,12,11,12,18,12,4,5,
   11,5,18,5,4,12,11,12,18,12
```



FLY!

Ace Atari pilot John S Davison, AFC, KB, JSO* takes to the air in a variety of aircraft. Are you good enough to fly with the best?

* Armchair Flight Commander, Keyboard Broken, Joystick Shot Off

A Spitfire simulator ought to be an irresistible program for the flight simulation fan. Add a good game element and the package should be a sure-fire winner with everyone. With **Spitfire 40** Mirrorsoft started out with this successful formula well over a year ago, and the program was very popular on other home micros. At last, they've released an 8-bit Atari version, so with great expectation, I prepared to become one of 'The Few'.

The game scenario has you as a newly trained pilot in your first Spitfire squadron. You must first learn to handle a Spitfire, and then go on to combat duty. Once into real combat, your experience and success in shooting down enemy aircraft and returning safely to your home base wins you medals and promotions. Who knows – you could have what it takes to become a Group Captain with DSO, DFC and VC to your name! Your progress is recorded in a log book which can be saved to disk or cassette, so you can continue your career next time you play.

All controls may be operated from the keyboard, with the option of using a joystick for aileron/rudder and elevator control. Everything is adequately explained in the 24 page instruction booklet, and summarised on a separate quick-reference sheet.

SIMULATION OR GAME?

On boot up, a single sound channel plays what could have been a stirring march with better treatment, presumably betraying the program's Spectral ancestry. Didn't the programmer know the Atari has FOUR sound channels?

Choice of 'simulator' or 'game' option at this point lets you either fly a complete sortie, or pitches you straight into the dogfight stage, saving you the trouble of the scramble and search for the enemy. Next, you load in the pilot's log, showing name, rank achieved, medals won, hours experience, victories scored, and other details. Following this, you choose either practice or combat mode which, predictably, lets you learn how to handle the Spitfire without worrying about the enemy or puts you in combat status awaiting action. A combat sortie starts with the order to 'scramble', giving height, bearing, distance and number of enemy aircraft. It's up to you to find them and see them off.

The next screen shows the runway through the framework of the cockpit canopy. The runway graphics are somewhat rudimentary, just a few straight lines against a green background. Inside the canopy, a rear-view mirror enables you to see when enemy aircraft get on your tail. The other prominent feature is the reflector gunsight, the grandaddy of the sophisticated 'head-up' displays found in modern combat aircraft.

Surprisingly, there's no instrument panel displayed at this point. To see it involves switching to a different screen, thus losing your view through the canopy. The panel graphics are probably the best feature of the program, showing the basic instruments you'd find in a real Spitfire. The instructions say you should be able to see the Spitfire's control column, which moves as you operate the controls, but there's no sign of it on the Atari version.

INTO ACTION

Scramble!!! Quick, start the engine!! This produces a noise very much like my next door neighbour's ancient motor mower instead of the unforgettable sound of the mighty Rolls Royce Merlin engine. OK, OK, I know it can't be reproduced exactly, but surely a competent programmer can do better than this?.

Right, release the brakes and accelerate at full throttle down the runway. At 90 knots, switching to runway view provides another disappointment. The crude runway outline is continually redrawn on the screen in an attempt to create the illusion of movement. The result is a jerky, flickering mess, quite unworthy of the Atari's capabilities.

After take-off, it's a case of climbing like crazy to intercept the enemy, using the map/radar to help you find him. Once again, the graphics are fairly minimal and chunky, showing your position relative to the enemy hordes. A map zoom feature gives several levels of detail, allowing you to see your position relative to the (very sparse) geographic features of the landscape below.

Going into map mode pauses the game, so you can't see the effect of any corrective manoeuvres without switching

back to the canopy view and then back into map mode. Changing course by a specific amount involves a further switch to the instrument panel so you can see the compass. I found it necessary to continually switch from screen to screen to locate the enemy, which became very tedious after a while.

TALLY HO!

Suddenly, an aircraft appears in your rear view mirror. Throwing the Spitfire into a screaming turn, you manage to shake him off your tail. Then he's in front of you, running for his life, and jinking about to avoid being hit. Tally Ho!! Open the throttle and chase him. The motor mower chugs louder and you get closer, centre him in your gunsight, and fire. You see a stream of bullets converge jerkily on him. He disintegrates and disappears, to be immediately replaced on a different part of the screen by one of his mates.

The Spitfire responds well to the controls, and I was pleased to see the horizon tilt smoothly as the aircraft is banked (unlike some so-called flight simulators). As expected, the artificial horizon on the instrument panel follows suit, but very jerkily and with joke standard blockiness. Other instruments seem to behave fairly realistically, though.

After dispatching the last enemy plane you have to find your way home, going through the annoying business of screen switching again to locate your home airfield. I found getting back to the airfield extremely difficult, as you can't see it unless you're below 3,000 feet (because of haze, the instructions say), and even then, it doesn't come into view until you're almost on top of it. In many hours of play I managed to land successfully only once. As you can't progress through the game without successful landings, the whole thing could, and did, rapidly lose its attraction.

GOOD IDEA, POOR IMPLEMENTATION

Full marks, Mirrorsoft, for supporting the 8-bit Atari. But please, next time, how about ensuring your programmers take advantage of the Atari's sound and graphics capabilities, instead of copying features from lesser machines.

I liked the idea behind Spitfire 40, but sadly, it's a classic case of a great idea spoiled by poor implementation. With more care it could have been a great simulator instead of a mediocre game. I hope the upcoming ST version remedies this.

JUST LIKE THE FALKLANDS?

Strike Force Harrier is another of those programs which aren't what they seem at first sight. Like many so-called flight simulators, it's more of a combat simulator than an accurate simulation of jet fighter flight. I can say this for several reasons: firstly it has a high find/shoot/bomb/avoid the enemy content, secondly the instrumentation in the aircraft is futuristic rather than realistic and, finally, the aircraft's flight behaviour doesn't look or feel quite right. Apart from this, though, it's a pretty good program!

The package contains two disks; a summary sheet showing all keyboard, mouse and joystick controls plus an overview of the instruments and data displays; and a map grid showing your starting point and the position of your eventual objective. The package is completed by a small instruction booklet containing hints and tips on flying the Harrier as well as the usual program details.

FIRST, LEARN TO FLY

After boot-up you choose the mission type from Demo, Practice, Combat, or Combat Practice, and the difficulty level from Pilot, Commander or Ace. The two higher levels introduce features such as black-out and red-out of the pilot's vision during high-G manoeuvres.

The Practice option gives you the chance to learn to fly the Harrier without getting shot at by the enemy. Helpful hints on how to take off vertically, make the transition to horizontal flight, back to the hover, and finally to land vertically again are given in the instruction booklet. It's



difficult at first, but like most things becomes easier with practice.

The screen layout is pretty standard for programs of this type, with the lower part displaying the cockpit instrumentation and the upper part showing a through the windscreen view with the obligatory HUD (Head Up Display) superimposed on it. Cockpit instruments are dominated by FOFTRAC (Friend Or Foe Tracking Radar), AAR (Air Attack Radar), Multifunction Display (showing fuel remaining, throttle setting, and positions of flaps, undercarriage, weapon inventory, etc), plus various warning and damage status indicators. The HUD shows essential flight information such as height, airspeed, vertical speed, pitch, and direction. It also acts as a gun/missile/bomb sight and special homing indicator to help you get back to base.

In fact, getting back to one of the four prepared landing sites is something you must learn fairly quickly, as you can't refuel or rearm anywhere else. Your instruments can guide you to the correct locality, but final identification has to be done visually. Landing areas are marked by flashing beacons, which can only be seen from fairly close range.

THEN, LEARN HOW TO FIGHT

Once you've got the hang of flying the beast, the next stage is to learn how to fight with it. The Harrier's offensive armament consists of three 1000lb bombs, two Sidewinder air-to-air missiles, and 250 rounds of cannon shells.

Weapon delivery is aided by several clever electronics systems. FOFTRAC is a combined map and radar display covering an area of one rectangle on the map grid supplied in the package. Map details shown include mountains and your landing sites. It also shows enemy SAM (surface to air missile) installations, and is continuously updated to show the current positions of active enemy tank formations, aircraft and missiles, plus your own flight track.

An annoying feature of FOFTRAC is that it loses the map display detail if you fly across the boundary from one grid rectangle into another. To get it back you have to fly across the centre of the rectangle at 16000 feet, as FOFTRAC has to photograph the area before it can be displayed. This is

reasonable if you enter a rectangle for the first time, but surely not EVERY time? If you accidentally clip the edge of the rectangle, you find, on re-entering the original area a few seconds later, that the detail has been lost and FOFTRAC no longer displays the position of the tanks. It's very hard to find them without FOFTRAC, so it's back to 16000 feet over the centre of the area again to regenerate the display. At that altitude you can guarantee you'll get a severe mauling by the enemy fighters. I repeatedly found myself in just this situation, and it quickly became a major source of irritation.

The Air Attack Radar helps you pinpoint enemy aircraft and avoid his missiles. It shows aircraft and missile positions within a 5 mile radius and height band of plus/minus 5000 feet of your current position.

NOW – DO IT FOR REAL!

When you think you can cope try flying a real mission. The objective is to fly to the enemy headquarters situated some 30 grid rectangles away from your initial base, and destroy it. You don't have enough fuel to get there and back, so you have to move your bases forward from their initial positions so they can support you. Unfortunately, the enemy is attacking your bases with tanks, so you have to destroy the tanks with bombs or cannon before a base can be moved. Once a base has been moved the enemy sends in a fresh tank squadron and the process begins over again.

While taking out the tanks you're likely to come under attack from small arms fire, anti-aircraft flak, and above 2000 feet, surface to air missiles. Small arms fire is generally harmless, flak can damage your health, and a missile hit is usually pretty terminal! The graphic effects of flak bursting around you are really rather good. And unique too – I've not seen this effect before in aerial combat games.

To find the tanks you have to get to 16000 feet so FOFTRAC can generate its display. This is where your dogfighting abilities are needed, as you're sure to get bounced by enemy MIG26 (no kidding!) jet fighters. These occasionally come screaming in at you for a head-on attack and the graphics for this are superb. No crude wire frame graphics here – you get the real McCoy! The MIGs fly VERY close to you at incredible speed – you get a big, detailed view of the aircraft for a split second as it flashes by. The effect is quite startling, and guaranteed to get the adrenalin pumping.

For much of the time, though, the MIGs are behind you trying to pick you off. Your job is to defend yourself using chaff, flares, and good old dogfighting skills, then to get behind them and stuff a few cannon shells or the odd missile up their rear orifices. All other views you get of the MIGs seem to be from behind, as they jink around trying to shake you off.

Once FOFTRAC has done its stuff, you can leave the MIGs to play with themselves and get back down to low level tank bashing again. Incidentally, you get points for clobbering tanks, SAM sites, and MIGs, giving you an incentive to try that bit harder with each successive go, even if you don't make it to the enemy headquarters.

CONCLUSIONS

As a flight simulator I found Strike Force Harrier disappointing, but as an air combat game it's one of the best around. Its mix of action and strategy should please the game players, while its complexity should keep the simulator techies interested too. Some of its graphical effects are startlingly good, but in the sound department it can only be described as adequate. Overall, then, a reasonable buy, but don't expect the ultimate flight simulator.





WELL HOW DO THE YANKS DO IT?

Microprose are renowned for their excellent simulation programs and **F-15 Strike Eagle** is well up to their usual standard. The high quality extends to the packaging and instructions too, as the program comes in an attractive bookform pack complete with superbly presented 'Flight Operations Manual'. This not only contains operating instructions, but also a wealth of information about the F15 and air combat techniques.

The program should really be classed as an air combat simulator rather than a flight simulator as it's essentially all about modern air warfare, using cannon and heatseeking and radar guided missiles, missile attack avoidance using electronics countermeasures, decoy flares and radar chaff and target bombing – rather than the niceties of flying an F15. For instance, you don't have to take off and land the brute, as each mission starts and ends with you in the air.

MULTIPLE MISSIONS

Seven mission scenarios (of increasing difficulty) are provided, covering Europe, the Middle East, and South East Asia. Basically, you have to locate and bomb specified targets and return safely to base. Unfortunately, the enemy has aircraft with similar weapons to yours, plus SAMs (surface to air missiles), and is quite keen on spoiling your little game!

You can identify and fight off these threats by using the F15's advanced avionics and weapon systems, plus, of course, the superb performance of the aircraft. Get it wrong and you could end up with an AA-8 Aphid heatseeking missile up your tailpipe! At best, you'll end up nursing a crippled, highly unstable aircraft back to friendly territory. As a last resort you can even bale out, with a 50/50 chance of escape.

For each mission scenario the manual explains the flight plan, likely threats, and the opening situation. It also has a map of the area in which you're operating, showing positions of primary targets, enemy airfields, known SAM sites, and any friendly bases where you can put down for refuelling or repairs. These maps have also been fed into the F15's navigation computers, and are displayed during flight.

Control is via keyboard and one or two joysticks. As usual, joystick 1 handles the primary flight controls plus weapons firing, while joystick 2 can take over some of the keyboard functions. I found the roll control rather too sensitive, but otherwise everything worked OK.

COMPETITIVE ELEMENT

On booting, you choose a skill level ranging from 'arcade', to 'ace'. Arcade is really an easy introductory level, but the other three levels are full simulations of progressively greater difficulty, with more numerous and cunning enemy aircraft

and SAMs. You can have up to 4 people in your squadron, each taking a turn to fly the missions. Points are awarded for hitting primary and other optional targets, and for enemy aircraft destroyed, giving the simulation a nice competitive element. It's also possible (and easier!) to have two player co-operative missions, where one person acts as the pilot dealing purely with the flight problems. The other acts as the weapons officer, responsible for selecting the right weapons at the right time, which isn't as easy as it sounds.

When a mission starts you're presented with the main screen of the simulation, showing the view from the F15 pilot's seat. The top half of the screen is the view through the windscreen, with the horizon cutting across the middle. As you'd expect, the horizon rises, falls and tilts convincingly to any angle, in response to the F15's controls. The ground (land or sea) is overlaid with a perspective grid pattern, which scrolls down to give the impression of movement – it's not realistic, but infinitely better than nothing at all. The only other ground features take the form of blue triangles representing primary and optional targets.

The F15 is fitted with a 'Head Up Display' (HUD), which projects important flight information such as airspeed, altitude, and navigation cues onto the windscreen. It also shows the gun, missile and bomb aiming sights, and enemy aircraft and missile tracking boxes. These boxes move across the windscreen, showing you where to look to visually locate incoming threats.

The bottom half of the screen contains several major systems. The map display shows the mission map mentioned earlier. You can set a cursor at any position on this, and the F15's navigation system will project course cues onto the HUD so you can fly directly to the pinpointed position.

The radar screen can be set at three ranges, and displays all targets (and missiles) in the air and on the ground. Above it, warning indicators give you early warning of incoming threats.

Finally, the weapons status display shows you at a glance how many bombs, short and medium range missiles, and decoy flares you've got left, and status of fuel drop tanks. There's a lot more on the screen too, but none of it includes 'conventional' aircraft instrumentation, which may upset some purists.

HEAVY WORKLOAD FOR PILOT

Once a mission gets under way, you have a really heavy workload, even with all the electronic systems to help you. Your basic task sounds simple: find the target, bomb it, and get home. Unfortunately, there are so many other things requiring your attention that it's not that easy. The worst distraction comes in the form of enemy aircraft. At the higher difficulty levels they can give you a really hard time. You have to use your skill and the F15's aerobatic ability to the full to outclass them, especially if you want to clobber them the macho way using the F15's cannon! You can easily burn up the whole mission's fuel trying to outfight one clever adversary. In fact, missions tend to have nailbiting endings, as you struggle to glide your damaged aircraft back to a friendly base because you were overly optimistic about fuel usage.

The sound effects add enormously to the realism – the whine of the jet engines, the roar of the afterburners, the whoosh of your missiles, the pinging of the warning systems. Yes, it's all here. There's even a few bars of music thrown in at the end of a mission to release the tension.

The only real criticism I have concerns the graphics showing what's happening outside. The ground grid movement is rather jerky, and horizon movement could be smoother. Also, the enemy aircraft are very simple outlines and again move jerkily. Even so, they seem to manoeuvre realistically. When hit by your missiles or shells, the resultant explosion doesn't look very convincing either – just a few straight lines radiating from the impact point.

All this can be forgiven, though, because as a simulation the program is totally absorbing, and as a game it's got that magic quality which forces you to have 'just one more go'! If you like simulations full of challenge, with large helpings of tension and excitement, F15 Strike Eagle is the program for you.



NOW FLY THE WORLD

At last. They're here. Sublogic's long awaited **Flight Simulator II Scenery Disks** for the 8-bit machines, that is! So far, 7 of a planned set of 12 covering the whole of the USA have been released, with the remainder due out later this year. There are also a few 'specials' planned. Two of these are already out, covering the San Francisco Bay area and, surprisingly, the Tokyo to Osaka area of Japan. Cost? Around £20 each in the UK (Ouch! That's expensive!).

I'd almost given up hope of finding the disks in the UK until a call to Strategic Plus Software, of Hampton, Middlesex, established that the San Francisco disk had arrived, but then the bombshell struck! They said they couldn't honestly sell me one as none of their stock copies worked properly. Instead, they kindly agreed to lend me one to try for myself. They were dead right – the main area on the disk (showing San Francisco city and Golden Gate Bridge) just wouldn't load, although the rest of the area was OK.

A letter to Sublogic in the USA produced almost instant action. They phoned me at home expressing concern that there were faulty versions of the disk around, as the problem was spotted and corrected in September last year! Just a few days later I received TWO disks from them by air freight, both of which are reviewed here.

STAR SCENERY

Let's begin with the San Francisco area. Sublogic call this a 'STAR' disk, meaning it covers a relatively small area, but with a higher than usual level of detail. The package contains a single sided disk in a plastic wallet, a map showing all airfields and radio navigation aids in the area, a set of airfield plans showing airfield layout and sundry other data, and finally the operating instructions. Most of the paperwork consists of looseleaf pages and these, together with the disk wallet, are all pre-punched to fit into a smart ring binder available separately

from Sublogic. Other disks in the series are similarly presented, so you can store everything neatly together.

The area covered measures about 75 miles by 50 miles, from Scaggs Island in the north to beyond San Jose in the south, taking in the whole of the San Francisco Bay area. Eastern limit is at Tracy, about 50 miles inland from the Californian coast. Within this area there are 16 airfields, many interesting topographical features, plus radio navigation aids to help you find your way about.

A few years ago I worked in the San Jose area for a while, so I know the area covered by this disk quite well. Many of the features I remember do actually appear here. The main attraction, of course, is San Francisco itself. I was disappointed to see so few buildings represented, but then 3D manipulation of a whole cityful of buildings would probably require the power of an IBM 3090/600 mainframe! The spectacular Transamerica Pyramid is included, plus about half a dozen lesser buildings. There's no detail shown of the port area, but the island of Alcatraz is there, complete with its infamous prison building.

The star of the disk (no pun intended) is undoubtedly the Golden Gate Bridge, although I wish Sublogic could have painted it the right colour! Both this and the nearby, 8 mile long, Bay Bridge are in full 3D representation, so you can fly over, round, through, or under them if you feel so inclined. In contrast, other bridges at the southern end of the bay are little more than single lines marking the bridge position.

Going further afield, there are other 3D features waiting to be discovered – like the three giant hangars at Moffet Field, a naval air station near Palo Alto, and the control tower at Livermore airfield, the first I've seen in this simulator. Many major roads and mountains are present and can actually be identified by name if you have a proper map of the area.

During my exploration I discovered an unexpected bonus. The area actually covered is much, much bigger than Sublogic's map shows. In fact, it includes the same area as that on the newly released ST version of Flight Simulator II, covering about 250 miles north to south by 200 miles east to west. All the airfields and radio aids seem to be the same too – that's a total of 47 airfields and countless radio beacons! The instructions say the extra area is included to give a smooth transition from this STAR disk into adjacent areas on other scenery disks. Apparently, you're not actually intended to use it!

JOURNEY THROUGH JAPAN

The Japan disk is packaged similarly to the other, but has one fascinating extra. This is a sheet of 'approach plates' showing the standard instrument approach procedures for seven of the major airfields. For instrument flying freaks this is really something! There are, however, no instructions on how to use these complex charts, so if you don't understand them already, they're not much use.

The disk covers a large area of some 350 miles by 210 miles of the Tokyo/Nagoya/Osaka region, giving you scope for really long flights. There are only 14 airfields here, but many of them have control towers and refuelling facilities. The area's vast array of radio beacons includes many NDB's for use with your aircraft's Automatic Direction Finding equipment, plus VOR/DME facilities if you need them. Also, eight of the major airport runways are equipped with Instrument Landing System for poor weather landings.

The Tokyo area has several interesting features, including Tokyo Tower, the palace grounds, canals, and the Shinkansen 'bullet train' network. As expected, significant roads, mountains, lakes and other waterways are included too, however detail at Osaka is limited to one building – the castle.

The snow capped Mt. Fuji is easily the most impressive feature on this disk. It takes quite a while to fly to it, round it, and back to Tokyo. Sublogic's simulation doesn't extend to the vicious air turbulence said to surround the mountain, so you can approach it without fear. If you like mountain flying there are plenty of others to choose from, and all in a realistic 3D representation, too.

ARE THEY WORTH IT?

Overall, both disks gave me a lot of pleasure. Personally, I prefer the San Francisco disk, as I know the area and enjoy 'revisiting' it by air. The Japan disk I like for its radio aids and detailed approach charts, which let you fly real live approach procedures. I wish Sublogic provided these with other scenery areas.

Apart from the cost, I have only two real criticisms. The first concerns the slow screen update with certain scenery, which makes control of the aircraft more difficult than usual. The other relates to a strange problem with mountains, where you can sometimes see things 'through' them. These niggles aside, I think Sublogic should be congratulated in releasing these disks. They're not cheap, but considering the extra scope and enjoyment they add to Flight Simulator II, I view them as a good buy and I look forward to getting my hands on more of the series.

Finally, special thanks to Strategic Plus and to Sublogic themselves for their help in producing this review. I get the feeling they really CARE about their customers, as well as the products they sell us.

PROGRAMS REVIEWED

Spitfire 40
Mirrorsoft
Disk £12.95
Cassette £8.95

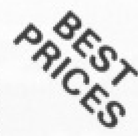
F-15 Strike Eagle
Microprose
Disk/Cassette £14.95

Strike Force Harrier
Mirrorsoft
ST only
£24.95

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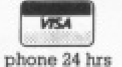
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If you have any interest at all in adventures then you will almost certainly have heard of The Pawn already (unless you have been stuck down a really nasty dungeon for the last year!). The ST version of it was released last year amidst a great flurry of advertising praising its wonderful graphics and 'revolutionary text-handling system which allows input of complicated sentences and complete interaction with characters". It is now available for the XL/XE but the bad news is that the graphics aren't as good on the 800 XL as on the ST, and that its understanding of English isn't quite as good as they would like us to think (I tried some 'complete interaction' with the Princess and it didn't understand at all, still I suppose it IS intended to be a family game!!)

The inferiority of the graphics is, to be fair, the hardware's fault and in fact the graphics are very good for an 800 XL – if you stand back from the pictures they are really quite impressive. There is also an excellent facility for scrolling the pictures smoothly up the screen with the SELECT key, so that you can use as much of the screen as you want for text. And there is plenty of text.

The descriptions of locations, artifacts and people, the results of your actions, and the responses to your attempts to converse with the many inhabitants of the game, all give you plenty of interesting and often amusing text. The text within the game is further supplemented by the fifty page booklet which comes with the game and details the background to it. 'A Tale of Kerovnia' introduces you to many of the characters in the adventure, including the King and his daughter, Kronos the Wizard and his pet dragon, Harry (who is supposed to be afraid of people – but didn't seem so when I met him!), and Gringo Baconburger, a dwarf who hopes to overthrow the King by democratic means!

'The plot unfolds slowly and deviously'

You start the game on The Path. Initially you have no idea of what your objective is, but if you wander around the immediately accessible area you will soon discover plenty to do. Getting rid of the annoying Silver Wristband which has appeared on your arm, finding a way to persuade the guards to let you into the palace, and working out how to get Honest John to part with some of his goods, are just a few of the goals you will soon set for yourself. And various characters will probably have jobs for you as well, assuming you can persuade Kronos to stop flying away on his stone platform long enough to have a chat, or the Guru to stop laughing so that you can get a word in edgeways!

The plot unfolds slowly and deviously. New characters appear, and you slowly find ways of reaching new and intriguing places. There are plenty of interesting problems to solve and most of them are pretty logical. The game gets especially nasty when you discover that there are multiple ways of solving some of the problems, and also multiple uses for certain single-use artifacts!

Choosing the right route to take through all this is not at all easy. You are aided here by two things. Firstly you should keep your eye on your score. It appears random as to whether it updates this on the move when you deserve it or on the next move. If you think you just did something clever but got no score for it, then perform some simple command (I or L) to check the real score. Secondly you can Save and Restore quite efficiently. Note that even though the documentation states that the Save Files are not in DOS format, the diskette must have been formatted by DOS, and to enhanced density, sorry – did I forget to mention that you must have a 1050 diskette drive to play this game?

Once I had finally sorted out all the devious red herrings and subplots, and achieved the prime objective which I had set myself, and even encountered a character who told me he was going to celebrate my finishing the game, I thought perhaps I had finished, but I had nowhere near the full score. I did a few more things I knew about which gave me more points, however I was now completely stuck. I read all the cypheric hints in the back of the book, but I still couldn't get the last few points. I have since found out how to get the full score (yes! – it is possible), but the game still doesn't end in any obvious way. I enjoy the feeling you get when you get the final message from a game and know that you have well and truly succeeded and definitely completed it. I still haven't found one in the Pawn – if YOU do please let me know!

Apart from that minor disappointment and a couple of little bugs (e.g. always GET anything before you UNTIE it or it may disappear forever!), my only real criticism is that it doesn't really understand as much as one might expect from the advertising. During a conversation it will attempt to respond meaningfully to any old garbage so you can't tell whether it understands or not. It is a trifle inconsistent in demanding additional information – e.g. if you say UNLOCK THE DOOR it asks WITH WHAT? and responds similarly for giving, buying and numerous other activities, but there are some sentences which appear quite correct and reasonable, and which are critical to finishing the game, to which it instead responds with phrases such as 'YOU CAN'T DO THAT TO THE ...' or 'I DON'T FOLLOW YOU' when it should, to be consistent and fair, respond with 'TO WHAT' or 'WITH WHAT' or 'ON WHAT', or at the very least give a sensible response which might encourage you to try and experiment

further in that direction. I occasionally found that the responses to certain requests were actually incorrect, either grammatically or just plain wrong – I think these are mainly attributable to its attempts to respond to sentences even when it doesn't really understand either all the words in the sentence or the grammatical construction you have used. It assumes full stops which you don't want (e.g. GO NORTHEAST WITH THE WHEELBARROW gets turned into two commands).

'The Pawn's ability to understand . . . is truly amazing'

The end result of all this is that the poor adventurer can occasionally have solved a problem but not be able to get the computer to understand what he wants to do – the game degenerates into trying to guess how the computer wants the request phrased. In general, however, The Pawn's ability to understand and respond correctly to some extremely complicated sentences is truly amazing and a demonstration of the game by someone who knows its capabilities could, I am sure, be a very impressive demonstration of Artificial Intelligence. Unfortunately the qualities which enable good demonstrations are not necessarily those required for good playing! Please don't misunderstand – the game really is excellent – just be aware that if you are stuck it may be the game's fault and not yours!

Other excellent features of the game include: the ability to key ahead; the ability to recall the last command, change it or correct an error in it, and resubmit it; excellent responses for a game of this sophistication; impeccable packaging, including a twelve page booklet on how to interact with the game; very few spurious locations and lots of fun – do examine the rats in the fountain!

For a company's first release to be so good shows great potential. If Magnetic Scrolls can keep up this level of quality then we should all look forward to their next adventure – The Guild of Thieves – with great relish. I thoroughly enjoyed The Pawn, despite a few minor frustrations, and have no hesitation in recommending it as excellent value for money.

P.S. Loved the maze!

Zork I – magic words, alternative solutions, short cuts, and jokes

Because of its origins, ZORK seems to have evolved rather than have been designed. Some of the original problems in the mainframe version have been given different solutions on the micro, in some cases the original solution has been left in the code on the micro, in other cases it has been removed.

Where these multiple solutions occur, then usually one is a single 'magic' word which is sometimes illogical and you have to be lucky to guess it, while the other is usually a longer, more complex, solution involving a number of actions of a more logical nature. The 'magic' word solutions generally appear to be older, part of the original game while the longer solutions have in some cases been added on the micro, presumably to enable a more logical solution without the poor adventurer having to make a lucky guess.

Some of the magic words are of course jokes.

PLUGH – in the Original Mainframe Adventure (NOT ZORK), if you stand at Y2 and wait, then a hollow voice booms PLUGH – which turns out to be a magic word for transporting you back to the building. In ZORK, if you type in PLUGH then it responds 'A hollow voice booms CRETIN.'

GRANITE – There are, I think, three granite walls in ZORK. I have not found any use for them. They are very clearly marked on INFOCOM's own map of ZORK. Are they entrances to the Thief's secret passages? Does anyone know their purpose? On the mainframe if you type in GRANITE it responds 'I think you are taking this thing for granite!'

Don't read any further unless you have either solved ZORK I or don't intend to try!

ECHO – On all versions I have seen this changes the Loud Room so that you can pick up the bar. The fuller solution, which does NOT work on the mainframe, is to open the dam, wait for the reservoir to empty, close the dam, and nip down and pick up the bar while the reservoir is refilling – the noise is from the water going over the top of the dam.

EXORCISE – On the mainframe you just get the Bell, Book, and Candle, go to the Entrance to Hades, and type in EXORCISE. Not so easy on the micro! – EXORCISE SPIRITS responds with 'You must perform the ceremony'. So here is a case where they had a simple solution on the mainframe and removed it. Now you must go through the whole rigmarole of RING BELL. GET CANDLES. LIGHT MATCH. LIGHT CANDLES WITH MATCH. READ PRAYER.

ODYSSEUS/ULYSSES – The full solution to getting past the cyclops involves feeding him hot peppers, then giving him a drugged drink of water to put him to sleep. The magic word scares him so that he smashes a route from the Cyclops Room to the Living Room for you. This not only saves time in getting rid of him, but also does away with the need for the key, the grate, and the other half of the maze! (Doing this also stops the thief from barring the trapdoor.) On the mainframe you also get 10 points for entering the Secret Passage which the cyclops uncovers, presumably this is another reason for making the prayer an acrostic about Ulysses (look at the first letter of each line of it!) – so as to give you a hint on how to get those last ten points!

PRAY – I didn't discover this until a year after I successfully completed ZORK I. It transports you and anything which you are carrying (such as the coffin, which otherwise appears impossible to extract from the Altar area) to the forest. The alternative is to pick up the coffin as early as possible in the game and drop it immediately. The thief will then take it and you can retrieve it later from his room at your leisure.

GERONIMO – On the mainframe, at the top of the falls, there is a wooden barrel. if you climb in you find the word GERONIMO etched on the side of it. Typing GERONIMO makes the barrel, with you in it, go over the falls. No, you don't survive! It was quite fun though, shame they left it out on the micro!

Short cuts:

RUB MIRROR to transport yourself from one side of the reservoir to the other.
Rather than wasting time getting into the boat with the sceptre, then having to repair the boat with the gunk, just PUT SCEPTRE IN BOAT, then it doesn't puncture it. Or, even better, wave the sceptre from the OTHER end of the rainbow.
Rather than going through all the rigmarole with the basket, lowering it down the shaft with everything in it, try going into the Draughty Room very early in the game – sometimes, on some versions, on some computers, it lets you walk in and out carrying as much as you like!

Do YOU know of any other short cuts or alternative solutions?

John Sweeney

MAKING IT MOVE

Mark Hutchinson's regular column for beginners

In issue 27 I said that GRAPHICS 0 and GRAPHICS 8 were similar. Perhaps you would like some further explanation? Each mode has the same colour attributes, i.e. a border, a background and a point on the background that is the same colour as the background but which can have a different luminosity. Each can be addressed down to a single pixel though GRAPHICS 0 is addressed in a block of 8 by 8 to make up a character.

The interesting part is that, if you can address GRAPHICS 8 using a similar block, you can write to this mode as if it were GRAPHICS 0. I have included LISTING 1 as an example of how this can be done. Obviously, being in Basic, it is slower than the operating system but it can come in useful.

The screen pointer (88,89) starts at the top left hand side of the screen. If you POKE any number here it would show as a character in a text mode, or as a coloured point in graphics modes.

Location 57344 is the start of 1024 bytes that hold the character set. Each character is 8 horizontal lines of one byte each. So 1024/8 gives 128 characters. These can be toggled with the inverse key (using an OR operation) to give another 128 characters. For more information, I would recommend the purchase of a good memory map.

The basis of the example listing is to to recognise the character required, look up the appropriate location, get the character data and then produce this data, one line at a time, as a block on the screen. When you RUN the program, you will see the character written quite slowly.

GETTING A MOVE ON

This issue I would like to have a look at movement (ANIMATION to programmers). Movement, without using Player Missile Graphics, comes in two forms. One form, published in issue 25 by Allan Knopp and in the last FIRST STEPS column, is called page flipping. This is where you draw several pages, with slight variations in each, and flick through them very fast to simulate movement. The other method is redrawing which is what we will look at now.

Moving a figure on a screen has to be done in steps. First the figure must be drawn in one location, then drawn (perhaps slightly different) in another position. Normally this is done by drawing the figure in a certain colour on the screen, redrawing in the same position using the background colour (effectively hiding the figure), then moving to another position and redrawing using the first colour. LISTING 2 is a good example of this technique. A variation of this theme is to use the colours of the points to create movement. You may wish to review the last column for details of COLOR and SETCOLOR.

COLOUR CYCLING

Now let's look at how LISTING 3 works. A row of characters is set up, each one using a different colour register. The colours are then shifted from one register to another in a cycle thus making the figure appear to change places. Your homework is to try this out in GRAPHICS 7, making a straight line (remember the robot eyes in Battlestar Galactica, the car in Knight Rider?).

Remember I mentioned memory locations 88 and 89 at the start of this article? One of the reasons is that you can place points directly on the screen using POKE instead of the slower PRINT or PLOT. A few years ago I was given a demonstration of this technique, a program called 'BUGS' written (in Basic) by none other than Les Ellingham! – it was FAST.

USING PRINT

PRINT can, however, still be used to animate the screen with reasonable speed. It is, after all, a form of redrawing. It can be slow and jerky but can have uses in graphic modes. Text modes 1 and 2 use upper case characters only, but they use the same SETCOLOR statements as the four COLOR statements. So if we were to print, say, ABCDEFGH, the four registers would be used for ABCD and then repeated for EFGH. Remember last time that I said GRAPHICS 7 uses only four COLOR statements? Well we can in fact print characters to a graphics screen, only thy will show as colour points only rather than letters. One of the reasons for using PRINT in a graphics mode is partly for speed. The character contains the colour register and the point does not need to use PLOT every time. Another good point is that the drawing can be stored as a string and ATARI is renowned for its speed in string handling.

LISTING 4 will demonstrate the speed of using a string instead of trying to PLOT points. I have also used the DRAWTO statement to show that drawing lines is just as fast this way as using a string but I wanted to point out the convenience of a using string – a method which I am sure many of you were not aware of.

LISTING 5 is a complex diagram stored as a string. Try this out using PLOT and DRAWTO and see if it just as fast. Experiment with character strings and different COLOR and SETCOLOR values and you should be able to build up some good graphics of your own.

I hope that this article will stimulate you enough to try out some of your own exercises, you will only become proficient by practice!

FIRST STEPS.... FIRST STEPS

```
YZ 1 REM FIRST STEPS - PAGE 6 ISSUE 28
NH 2 REM
AL 3 REM ****** LISTING 1 ******
NJ 4 REM
ET 9 REM *** Set up string and initial
          X, Y position.
GG 10 DIM TEXT$(30):X=11:Y=80:COLOR 1:TEX
   T$="THIS IS GRAPHICS 8":GRAPHICS 8
ZC 19 REM *** Get screen pointer and POKE
          initial position.
TD 20 W1=PEEK(88)+PEEK(89)*256:W2=W1+Y*40
   +X:IF LEN(TEXT$)=0 THEN END
XS 29 REM *** Change character to ATASCII
          value, keep it within set.
WK 30 FOR SP=1 TO LEN(TEXT$):X=ASC(TEXT$(
   SP,SP)):IF X>127 THEN X=X-128
HZ 39 REM *** Upper case & graphics only.
AJ 40 IF X>31 AND X<96 THEN X=X-32:GOTO 6
   0
XM 50 IF X<32 THEN X=X+64
JB 59 REM *** Insert into TEXT$.
RX 60 TEXT$(SP,SP)=CHR$(X):NEXT SP
IN 70 FOR Z=1 TO LEN(TEXT$):X=ASC(TEXT$(Z
   ,Z)):W3=57344+X*8:FOR ME=0 TO 7
HV 79 REM *** POKE it into screen memory.
GF 80 POKE W2+ME*40,PEEK(W3+ME):NEXT ME:W
   2=W2+1:NEXT Z
VG 90 ? "▸▸ALL DONE!"
```

Listing 1

```
YZ 1 REM FIRST STEPS - PAGE 6 ISSUE 28
NH 2 REM
BH 3 REM ****** LISTING 2 ******
NJ 4 REM
GA 9 REM *** Set up mode and print.
QQ 10 GRAPHICS 3:POKE 752,1:? "ANIMATION
   USING COLOR 1 AND COLOR 0":? "▸See lin
   es 9%→40"
TA 19 REM *** Plot point with one colour,
          add some sound.
MS 20 FOR X=0 TO 39:COLOR 1:PLOT X,10:FOR
    V=15 TO 0 STEP -1:SOUND 0,X*6,10,V:NE
   XT V
MC 29 REM *** Erase point with another
          colour, stop sound.
OJ 30 FOR T=1 TO 15:NEXT T:COLOR 0:PLOT X
   ,10:NEXT X:SOUND 0,0,0,0
CW 39 REM *** That's all.
XI 40 ? "K▸▸ALL DONE!"
```

Listing 2

```
YZ 1 REM FIRST STEPS - PAGE 6 ISSUE 28
NH 2 REM
CD 3 REM ****** LISTING 3 ******
NJ 4 REM
LE 9 REM *** Set up mode & print string.
KM 10 GRAPHICS 18:FOR P=0 TO 3:POKE 708+P
   ,2+4*P:NEXT P:FOR X=0 TO 19 STEP 4:POS
   ITION X,5:? #6;"AaAa":NEXT X
BS 19 REM *** Save a register colour.
FZ 20 FOR CN=1 TO 100:PP=PEEK(711)
LX 29 REM *** Cycle register colours.
WL 30 POKE 711,PEEK(710):POKE 710,PEEK(70
   9):POKE 709,PEEK(708):POKE 708,PP:FOR
   TM=1 TO 5:NEXT TM:NEXT CN
```

Listing 3

```
YZ 1 REM FIRST STEPS - PAGE 6 ISSUE 28
NH 2 REM
CZ 3 REM ****** LISTING 4 ******
NJ 4 REM
WH 9 REM *** Set up screen and use PLOT
          only
NW 10 GRAPHICS 3:POKE 752,1:C=1:POKE 710,
   98:FOR X=13 TO 24:FOR Y=0 TO 19:COLOR
   C:PLOT X,Y:NEXT Y:C=C+1:NEXT X
OG 20 POKE 764,255:? "▸↓PRESS ANY KEY TO
   CONTINUE"
PP 30 IF PEEK(764)=255 THEN 30
RS 39 REM *** Set up screen and use PLOT
          and DRAWTO.
JE 40 GRAPHICS 3:POKE 752,1:C=1:POKE 710,
   98:FOR X=13 TO 24:Y=0:COLOR C:PLOT X,Y
   :DRAWTO X,Y+19:C=C+1:NEXT X
OJ 50 POKE 764,255:? "▸↓PRESS ANY KEY TO
   CONTINUE"
SS 60 IF PEEK(764)=255 THEN 60
XP 69 REM *** Set up screen & use string.
IQ 70 GRAPHICS 3:POKE 752,1:POKE 710,98:F
   OR Y=0 TO 19:POSITION 13,Y:? #6;"12341
   2341234":NEXT Y
OM 80 POKE 764,255:? "▸↓PRESS ANY KEY TO
   CONTINUE"
VV 90 IF PEEK(764)=255 THEN 90
```

Listing 4

```
YZ 1 REM FIRST STEPS - PAGE 6 ISSUE 28
NH 2 REM
DV 3 REM ****** LISTING 5 ******
NJ 4 REM
NP 9 REM *** Dimension string. DATA for
          first half of string.
CZ 10 CLR :DIM G$(112):G$(1,56)="41111223
   4111123341111333411123334111233341212З
   3343412111"
DX 19 REM *** Dimension second half of
          of string. Graphics mode.
          (USE 3, 5, OR 7).
BY 20 G$(57,112)="34212113422121342221242
   4242413131312424242313131323242З2":GRA
   PHICS 3
IX 29 REM *** Print string as a matrix of
          16 rows (P) & seven columns
XN 30 FOR P=1 TO 16:POSITION 10,0+P:? #6;
   G$(P*7-6,P*7):NEXT P
```

Listing 5

XWORD

CROSSWORD MAKER

by Jim Flewker

Requires Epson compatible printer

XWORD is designed to print out crossword puzzles of various sizes. It will not do the thinking for you, but it will print blank grids, puzzles, solutions, and (using a separate program) clues. The program has been designed to work with Epson-compatible printers, although it should be easy to adapt it for other 80-column and 40-column printers.

XWORD will create a grid up to 17 spaces wide by 17 deep, square or oblong in shape. An odd number of spaces must be used. Words and black squares may then be inserted on screen, and two kinds of symmetry can be used automatically when placing black squares. The grid may be printed at any stage, as a puzzle or as the solution, with answers. The separate program XCLUES prints clues in two columns for those not wishing to use a word processor. A joystick is required to move the cursor around in the grid.

The Clue Numbering is slightly different from normal crosswords. Instead of printing large boxes containing a number for each word, I opted for smaller boxes and a co-ordinate system – letters along the top and numbers down the side. This enables the start of any word to be located by a code such as a1, g9, etc.

HOW TO USE THE PROGRAM

When run the program will ask you to decide the size and shape of your puzzle and its symmetry if any. The screen will blank briefly and the grid will appear a few seconds later. It is probably a good idea to print out the empty grid and use it to design your puzzle on paper. After that you could fill in black squares or place words in any order you wish.

The top screen line shows the main menu choices from which you choose. If you want to add either words or blacks, you will see that the option number is already printed for you – just press return. For another choice, type the number and press return.

OPTIONS

Add – Select this to fill the grid and use the joystick to move the flashing cursor around the grid. It cannot go outside of it. On selecting Add you see various sub options and keys displayed:-

- ESCAPE will return you to the main menu (as will some errors).
- OPTION alters (or turns off) the symmetry for black spaces.
- SELECT toggles direction of word placement.
- START allows you to enter a word, which will begin at the current cursor position. Confirm that start and direction are right by pressing RETURN entering anything else returns you to the menu. The program will first check that the word fits in the grid and if so, will place it for you. Note that no other checks are made, so you can place words across blacks and existing letters.
- JOYSTICK TRIGGER fills a black square (or several, depending on symmetry). On screen, black spaces are shown as dots. You can't erase a dot but you CAN place a word over it.

Symmetry – You may prefer to do without this altogether, or you can choose between two types:-

DIAGONAL symmetry which creates a puzzle like those often seen in newspapers, with each corner mirroring the one diagonally opposite. You can work on the top half of the grid and your pattern will be mirrored below.
FOUR-SQUARE symmetry in which each quarter of the total grid mirrors the others. You need only block in the top left-hand quarter of the grid. Indeed you will find that the cursor will always return to that area when you fill blacks using this symmetry.

Print – You can print at any stage, with or without answers. You are then returned to the main menu.

Clues – Because this is a separate program, you are asked if you have finished printing your crossword (and solution) before proceeding. (No means of storing the puzzles on disk has been provided – you could add one!)

Restart – Again you are asked to confirm your choice before the current creation is lost for ever.

PROGRAM NOTES

The screen grid: in order to provide a good-sized puzzle grid on screen without scrolling, the right amount of black horizontal lines are created by setting up a new display list in page 6. The lines are simply two blank scan lines between normal text lines. The vertical lines are CHR$(124).
Storage of puzzle data: characters are merely printed on screen and, for hard copy, peeked directly from screen memory. Some conversion is needed from internal codes to ASCII and Epson equivalents before these are sent to the printer.
Printer routines: On printout the above data is interspersed with strings which contain the values of Epson graphics characters. These strings are built to the right size by the subroutine in lines 100-120, from the elements given in lines 5410-5430. You can alter those to suit your printer. More details of printer commands are given in REMs 8050-8090.

```
EI 1 REM ******************************
NR 2 REM *          X-WORD            *
LR 3 REM *            by              *
SG 4 REM *       JIM FLEWKER          *
EC 5 REM * -------------------------- *
IZ 6 REM *  PAGE 6 MAGAZINE - ENGLAND *
EO 7 REM ******************************
NO 9 REM
WX 10 N40=40:N50=N40+10
FL 20 DIM PTOP$(N40),PRIN$(N40),PBOT$(N40),TEMP$(N40),IN$(17),PHEAD$(N40)
ZZ 30 DIM BLANK$(37),MID$(2),EN$(2),ESC$(1),BELL$(5),ABC$(34),D$(10)
ZP 40 CONSOL=53279:DL=1536:SIZE=100:HEADER=150:SELECT=200
IL 50 WIPE=250:TRIG=300:DELAY1=400:DELAY2=450:OPTION=500:VMIN=3
GJ 60 BELL$=CHR$(253):BELL$(2)="↑→  ":ESC$=CHR$(27):D$="ALONG/down"
MY 70 BLANK$(1)=" ":BLANK$(37)=" ":BLANK$(2)=BLANK$
WS 80 ABC$="abcdefghijklmnopq"
JM 90 GOTO 5000
SV 99 REM  SIZE: makes printer strings 
CA 100 FOR REP=1 TO WID-1
XD 110 TEMP$(LEN(TEMP$)+1)=MID$:NEXT REP
NK 120 TEMP$(LEN(TEMP$)+1)=EN$:RETURN
PX 149 REM  Make printer column heading 
EN 150 PHEAD$="   "
CR 160 FOR REP=1 TO WID
RS 170 PHEAD$(LEN(PHEAD$)+1)=ABC$(REP,REP):PHEAD$(LEN(PHEAD$)+1)=" "
TW 180 NEXT REP:RETURN
LD 199 REM  Select direction 
UW 200 SOUND 0,81,10,6
IV 210 GOSUB DELAY1
HU 220 GOTO 230+DIR
EF 231 DIR=2:D$="along/DOWN":GOTO 240
FK 232 DIR=1:D$="ALONG/down"
FJ 240 POSITION 11,0:? D$:SOUND 0,0,0,0:RETURN
RC 249 REM  Wipe top 2 lines of screen 
DT 250 SOUND 0,121,10,6
KI 260 POSITION 2,0:? BLANK$
LA 270 POSITION 2,1:? BLANK$
WC 280 SOUND 0,0,0,0
ZQ 290 RETURN
FJ 299 REM  Symmetry/blacks 
IN 300 IF SYM=3 THEN 390
UG 310 OFFSET=H-HMIN:HS=HMAX-OFFSET
EK 320 OFFSET=V-VMIN:VS=VMAX-OFFSET
HB 330 IF SYM=1 THEN 380
FX 340 IF V>VMIN+DEP/2 THEN TEMP=V:V=VS:VS=TEMP
LE 350 IF H>HMIN+WID THEN TEMP=H:H=HS:HS=TEMP
UV 360 POSITION HS,V:? "●"
WH 370 POSITION H,VS:? "●"
JS 380 POSITION HS,VS:? "●"
YJ 390 POSITION H,V:? "●":CX=20:RETURN
FW 399 REM  Delay1 
LD 400 FOR DEL=1 TO N50:NEXT DEL
ZC 410 RETURN
GC 449 REM  Delay2 
TD 450 FOR DEL=1 TO N50*10:NEXT DEL
ZM 460 RETURN
FG 499 REM  Option: symmetry 
VA 500 SOUND 0,72,10,6
TN 510 IF SYM=4 THEN SYM=1
PW 520 POSITION 35,0
PX 530 IF SYM=1 THEN ? "Diag"
YN 540 IF SYM=2 THEN ? "4-Sq"
OV 550 IF SYM=3 THEN ? "None"
JI 560 GOSUB DELAY1
RP 570 SOUND 0,0,0,0:RETURN
MO 999 REM  Joystick Routine 
HS 1000 DIR=1:H=HMIN:V=VMIN
TL 1010 GOSUB WIPE:TRAP 1010
ZG 1020 POSITION 2,0:? " 1 Add  2 Print 3 Clues  4 Restart"
LO 1030 POSITION 3,1:? "1";:POSITION 2,1:INPUT CHOICE
ND 1040 IF CHOICE<1 OR CHOICE>4 THEN ? BELL$:GOTO 1030
IK 1050 IF CHOICE=2 THEN GOSUB 8000:GOTO 1010
KG 1060 IF CHOICE=3 THEN GOSUB 9000:GOTO 1010
BJ 1070 IF CHOICE=4 THEN 10000
BL 1090 POSITION 2,0:? " SELECT  ";D$;"  OPTION  sym:  ":GOSUB OPTION
UV 1100 POSITION 2,1:? " START  word ●TRIG● black Esc menu"
YO 1110 IF PEEK(764)=28 THEN POKE 764,255:GOTO 1010
ED 1120 S=STICK(0):IF S=15 THEN 1190
BF 1130 H=H+2*(S>4 AND S<8)
TW 1140 H=H-2*(S>8 AND S<12)
IH 1150 V=V+(S=5)+(S=9)+(S=13)
QR 1160 V=V-(S/2=INT(S/2))
ZV 1170 IF H<HMIN OR H>HMAX THEN H=HMIN
OS 1180 IF V<VMIN OR V>VMAX THEN V=VMIN
YK 1190 LOCATE H,V,CX:IF CX>127 THEN CX=CX-128
EL 1200 POSITION H,V:? CHR$(CX+128)
UG 1210 FOR DEL=1 TO 10:NEXT DEL
OM 1220 PC=PEEK(CONSOL):IF PC<7 THEN GOSUB DELAY1
KB 1230 IF PC=5 THEN GOSUB SELECT:GOTO 1110
KO 1240 IF PC=6 THEN GOSUB 2000:GOTO 1090
OK 1250 IF PC=3 THEN SYM=SYM+1:GOSUB OPTION:GOTO 1110
AT 1260 IF STRIG(0)=0 THEN GOSUB TRIG
ZR 1270 POSITION H,V:? CHR$(CX):FOR DEL=1 TO 10:NEXT DEL
OP 1280 GOTO 1110
YM 1999 REM  Place words in grid 
EI 2000 POSITION H,V:? CHR$(CX+128)
TG 2010 POSITION 2,1:? BLANK$
QE 2020 POKE 764,255:POSITION 2,1:? " PUT WORD: start & direction OK Y←←";
ZY 2030 INPUT IN$:IF IN$<>"Y" THEN RETURN
EG 2040 GOSUB WIPE
TG 2050 POSITION 2,0:? "Your word";:INPUT IN$
WF 2060 TH=H:TV=V
IN 2070 FOR N=2 TO LEN(IN$)
FA 2080 TH=TH+2*(DIR=1):TV=TV+(DIR=2):NEXT N
TN 2090 IF TH>HMAX OR TV>VMAX THEN 2170
HI 2100 FOR N=1 TO LEN(IN$)
IW 2110 POSITION H,V:? IN$(N,N)
AZ 2120 H=H+2*(DIR=1):V=V+(DIR=2)
HE 2130 NEXT N
XC 2140 IF H>HMAX THEN H=HMAX
FR 2150 IF V>VMAX THEN V=VMAX
AU 2160 RETURN
BN 2170 POSITION 2,0:? ">TOO LONG>K":GOSUB DELAY2
BA 2180 RETURN
BB 4999 REM  SETUP 
OF 5000 GRAPHICS 0:POKE 752,1
LH 5010 SETCOLOR 2,0,0:SETCOLOR 1,0,12
QB 5020 POSITION 11,1:? " Crossword Printer ":TRAP 5540
IH 5030 POSITION 2,3:? " WIDTH: Enter an odd number up to 17"
XU 5040 INPUT WID:IF WID/2=INT(WID/2) THEN ? BELL$:GOTO 5030
FK 5050 IF WID>17 THEN ? BELL$:GOTO 5030
DC 5060 POSITION 2,6:? " DEPTH: Enter 1 for a SQUARE puzzle"
NF 5070 POSITION 10,8:? "or any odd number up to 17"
HQ 5080 INPUT DEP:IF DEP/2=INT(DEP/2) THEN ? BELL$:GOTO 5060
BD 5090 IF DEP=1 THEN DEP=WID:GOTO 5150
GG 5120 IF DEP>17 THEN ? BELL$:GOTO 5060
YC 5150 POSITION 2,14:? " SYMMETRY: Choose from - "
CN 5160 ? :? "1 Diagonal 2 Four-Square 3 NONE at all"
GG 5170 INPUT SYM:IF SYM<1 OR SYM>3 THEN ? BELL$:GOTO 5150
JL 5200 FOR REP=3 TO 21 STEP 2
```

```
CQ 5210 POSITION 2,REP:? "  PLEASE WAIT
                                        
     SCREEN WILL BLANK  "
CU 5220 NEXT REP
YQ 5230 GOSUB DELAY2
EX 5240 ? "K":P559=PEEK(559):POKE 559,0
OA 5250 GWID=1+(2*WID):GDEP=1+(2*DEP)
OY 5260 MARGIN=INT((41-GWID)/2)
IF 5280 MAX=GDEP+6:ADD=22-(DEP+INT(DEP/4)
   )
HS 5300 SETCOLOR 2,11,10:SETCOLOR 1,11,0
RQ 5330 FOR N=DL TO DL+60:POKE N,0:NEXT N
TW 5340 FOR REP=0 TO 2:POKE DL+REP,112:NE
   XT REP
OA 5350 POKE DL+3,66:POKE DL+4,PEEK(88):P
   OKE DL+5,PEEK(89):POKE DL+6,2
HY 5360 FOR N=8 TO MAX STEP 2:POKE DL+N,1
   6:NEXT N
GJ 5370 FOR N=7 TO MAX+1 STEP 2:POKE DL+N
   ,2:NEXT N
EV 5380 FOR N=MAX+2 TO MAX+ADD:POKE DL+N,
   2:NEXT N:MAX=MAX+ADD
IM 5390 POKE MAX+1,65:POKE MAX+2,0:POKE M
   AX+3,6
DL 5400 POKE 560,0:POKE 561,6
YT 5410 TEMP$="  8":MID$="51":EN$="59":GO
   SUB SIZE:PTOP$=TEMP$
RR 5420 TEMP$="  3":MID$="57":EN$="52":GO
   SUB SIZE:PRIN$=TEMP$
BS 5430 TEMP$="  B":MID$="50":EN$="5;":GO
   SUB SIZE:PBOT$=TEMP$
FE 5440 GOSUB HEADER
OK 5450 ABC$=PHEAD$(3)
WS 5460 POSITION MARGIN,2:? ABC$
AV 5470 FOR NUM=3 TO DEP+2:POSITION MARGI
   N-2,NUM:? NUM-2
CL 5480 FOR Q=MARGIN TO MARGIN+(GWID-1) S
   TEP 2
GO 5490 POSITION Q,NUM:? "|":NEXT Q
NV 5500 POSITION MARGIN+GWID,NUM:? NUM-2
HC 5510 NEXT NUM
DD 5520 HMIN=MARGIN+1:H=HMIN:HMAX=HMIN+GW
   ID-3:VMAX=2+DEP:V=VMIN
UM 5530 POKE 559,P559:GOTO 1000
QX 5540 SETCOLOR 2,5,2:GOSUB DELAY2:? "K"
   :SETCOLOR 2,0,0:GOTO 5020
KI 7999 REM  Screen Printout
EA 8000 GOSUB WIPE
ZE 8010 POSITION 2,0:? "Print 1 as puzzle
   2 with answers";:INPUT MODE
EG 8020 IF MODE<1 OR MODE>2 THEN 8000
EL 8030 SCR=PEEK(DL+4)+256*PEEK(DL+5)
TH 8040 SCR=SCR+120+(MARGIN-1):POKE 559,0
UL 8050 REM  8110 sets Epson left margin
MO 8060 REM  to 10, 8120 selects graphic
FT 8070 REM  chars. & unidirectional
WB 8080 REM  print, 8130 sets spacing
VR 8090 REM  so there are no gaps.
IZ 8100 OPEN #2,4,0,"P:"
RF 8110 ? #2;ESC$;"1";CHR$(10)
VI 8120 ? #2;ESC$;"R";CHR$(10):? #2;ESC$;
   "U";CHR$(1)
YM 8130 ? #2;ESC$;"A";CHR$(8)
DE 8140 ? #2;PHEAD$:? #2;PTOP$
GB 8150 FOR NUM=1 TO DEP:? #2;NUM;:IF NUM
   <10 THEN ? #2;" ";
WR 8160 FOR N=1 TO GWID
XH 8170 BYTE=PEEK(SCR+N):IF BYTE=124 THEN
    BYTE=182
NZ 8180 IF BYTE=84 THEN BYTE=209
ZH 8190 IF BYTE<96 THEN BYTE=BYTE+32
BK 8200 IF MODE=1 AND BYTE>32 AND BYTE<12
   8 THEN BYTE=32
EJ 8210 ? #2;CHR$(BYTE);:NEXT N:SCR=SCR+4
   0:? #2;CHR$(155);
CL 8220 IF NUM=DEP THEN ? #2;PBOT$
FS 8230 IF NUM<DEP THEN ? #2;PRIN$
HI 8240 NEXT NUM
RU 8250 CLOSE #2:POKE 559,P559
ZD 8260 MODE=1:RETURN
FT 8999 REM  Clues
EB 9000 GOSUB WIPE
IM 9010 POSITION 2,0:? "NB Print puzzle &
    solution first!"
LQ 9020 POSITION 2,1:? "RUN separate CLUE
   S program Y←←";:INPUT IN$
WQ 9030 IF IN$<>"Y" THEN RETURN
GP 9040 RUN "D:XCLUES"
ZW 9999 REM  Exit and restart
QC 10000 GOSUB WIPE
AQ 10010 POSITION 2,0:? "Confirm Restart
   Y←←";
WF 10020 INPUT IN$:IF IN$<>"Y" THEN 1010
EG 10100 CLR :RUN
```

```
EI 1 REM ******************************
HF 2 REM *        X-WORD CLUE MAKER    *
LR 3 REM *            by               *
SG 4 REM *        JIM FLEWKER          *
EC 5 REM * --------------------------- *
IZ 6 REM *  PAGE 6 MAGAZINE - ENGLAND  *
EO 7 REM ******************************
NO 9 REM
ON 10 REM  CLUE PRINTER FOR XWORD
BK 20 DIM CLUE$(3000),TEMP$(120),ESC$(1),
   BLANK$(120),A$(13)
ZO 30 BLANK$(1)=" ":BLANK$(120)=" ":BLANK
   $(2)=BLANK$
ZZ 40 ESC$=CHR$(27)
BN 50 GRAPHICS 0:POKE 752,1
SN 60 SETCOLOR 1,7,2:SETCOLOR 2,7,8
OO 70 GOTO 170
UP 79 REM  Clue Input
OB 80 POSITION 2,3:? " Enter";A$
VC 90 POSITION 2,5:? " When";A$;"complete
    "
RC 100 POSITION 2,6:? "        just press RE
   TURN    "
PB 110 POSITION 2,9:? BLANK$:POKE 752,0
SZ 120 POSITION 1,9:INPUT TEMP$:IF TEMP$=
   "" THEN TEMP=LC:RETURN
DV 130 IF LEN(TEMP$)>38 THEN CR=CR+1
KR 140 CLUE$(LC+1)=TEMP$:CLUE$(LEN(CLUE$)
   +1)=CHR$(155)
AQ 150 CR=CR+1:LC=LEN(CLUE$)
MM 160 POKE 752,1:GOTO 110
ND 169 REM  Main and printer routines
PC 170 POSITION 12,1:? " Clue Printer "
HR 180 CR=3:A$=" ALONG clues "
TB 190 GOSUB 80:A=TEMP:LINES=CR
CM 200 A$=" DOWN clues ":GOSUB 80
OD 210 POSITION 1,9:? " NOW PRINTING CLU
   ES..."
TC 220 OPEN #2,4,0,"P:"
SQ 230 ? #2;ESC$;"@"
ZU 240 ? #2;ESC$;"1";CHR$(2);ESC$;"Q";CHR
   $(40)
DZ 250 ? #2;"ALONG:-"
ZH 260 ? #2;CLUE$(1,A)
LZ 270 FOR N=1 TO LINES
LK 280 ? #2;ESC$;"j";CHR$(36);:NEXT N
HY 290 ? #2;ESC$;"@";
IM 300 ? #2;ESC$;"1";CHR$(41):? #2;ESC$;"
   Q";CHR$(79);
QD 310 ? #2;"DOWN:-"
QP 320 ? #2;CLUE$(A+1,LC)
LR 330 CLOSE #2
GO 340 POKE 764,255:? "ENTER CLUES AGAIN?
    (Y/N)"
KQ 350 IF PEEK(764)=43 THEN POKE 764,255:
   RUN
QA 352 IF PEEK(764)=35 THEN POKE 764,255:
   ? CHR$(125):END
PB 354 GOTO 350
GI 360 REM in reverse direction, lines
RZ 370 REM 240 and 300 set margins so
WJ 380 REM clues print in 2 columns of
SL 390 REM 38 characters as seen on
XL 400 REM screen.
TB 410 REM Change to suit your printer.
```

SOFTWARE REVIEWS

Jim Short and Paul Blazeby

TOMAHAWK



Digital Integration
XL/XE only
64k disk
£14.95
64k cassette
£9.95
1 Player
Joystick



New trends fade almost as fast as they are introduced, but flight simulators seem to be as popular as ever. This one from Digital Integration is, in effect, an Atari follow-up to their previous smash hit, Fighter Pilot. This time out it's based around a helicopter rather than a jet fighter, the chopper in question being the U.S. Army AH-64A Apache.

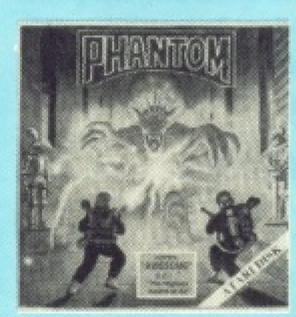
TOMAHAWK appears to be an enhanced version of it's predecessor. The graphic display is virtually identical and the screen view and accompanying instrument panel will be familiar to all Fighter Pilot fans. There are various improvements here and there, of course – and no fiddly 'Lenslock' to contend with either!

All the usual flight options have been retained, but TOMAHAWK is a much more complicated beast than it's Fighter Pilot counterpart and more keyboard controls are required to operate it. This shouldn't cause any headaches for flight addicts though.

The in-flight graphics have been spruced up no end and the game boasts over 7000 ground features which are mainly in 3-D, and the geometrical shapes have a certain feeling of depth to them rather than the usual vague outlines often found in this type of game. D.I.'s 3-D 'real world' display includes landing pads, buildings, trees, transmission pylons, mountains, enemy tanks, field guns and helicopters, so there's plenty to get excited about.

TOMAHAWK is a genuine luxury product with all the trimmings. If you're into flight simulators, don't miss it!! •

PHANTOM



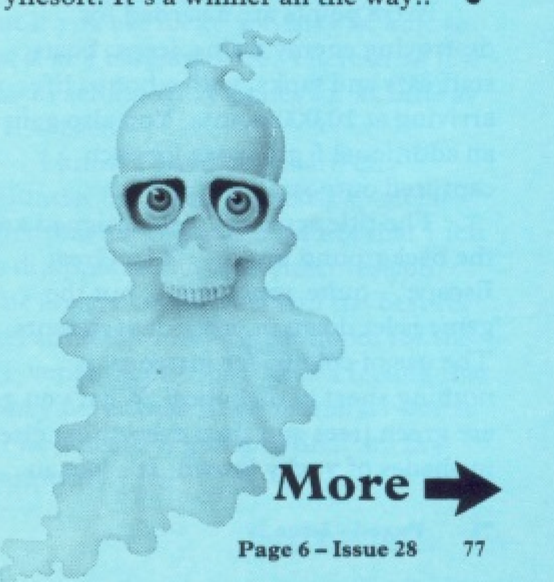
Tynesoft
48k disk
£9.95
48k cassette
£7.95
1 Player
Joystick

Tynesoft have taken a lot of stick from me for the awful Jetset Willy but they've made amends with PHANTOM, a brilliant arcade adventure which should help restore their credibility.

The scene is set as follows:- Those darn ghosts have been creating havoc again. As Professor of Astro-Physics with more than a passing interest in Psychic Phenomena you are well prepared for the situation. Equipped with your experimental nuclear accelerator you must destroy all the ghosts, monsters and other evil apparitions that live in the four buildings you have been asked to visit.

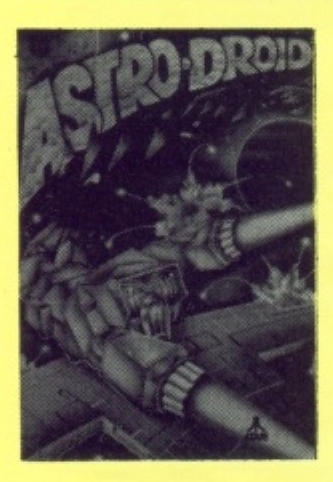
Gameplay is based around a variety of maze type screens viewed from above. There are several rooms per building and progressing through the rooms is accomplished by collecting a series of keys which allow you access to subsequent rooms. Your eventual aim is to reach the Transporter Room on the bottom floor of each building. You gain bonus points for clearing a room of it's ghostly inhabitants, but overuse of your weapon will drain your reactor, and isotope power packs are few and far between. A close encounter with an apparition will accelerate your ECG rate. If it reaches 100 BPM it's curtains for you, so a degree of caution is advisable. A superb control panel situated below the maze lets you keep track of all these important readouts.

Graphics, colour and animation are beyond criticism and the background music, which changes repeatedly during gameplay, is quality stuff. Maybe PHANTOM isn't quite as complex as other games in this format, but it's far easier to get to grips with than most of them and should therefore have a much wider appeal. Top marks for this one Tynesoft. It's a winner all the way!! •



More ➡

ASTRO-DROID



Red Rat
48k Disk
£9.95
48k Cassette
£7.95
1 Player
Joystick

This one was written by the author of Screaming Wings and it shows as ASTRO-DROID is basically a futuristic version of Paul Craven's previous effort for Red Rat. Indeed, it might well have been called SCREAMING WINGS 2001!

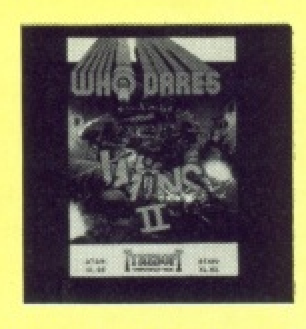
The game scenario speaks of Reldan Fighters and Neutron-powered Star Craft and suchlike, but you can forget the blurb as this is more or less another Uridium clone. Quite obviously it's Red Rat'S bid to cash in on the success of Warhawk and this should be enough to tell you that ASTRO-DROID is a vertical scrolling space-zapper.

The flight over the Reldan mega-craft is identical to the flight over the asteroid station in Warhawk, but the alien space-fighters are faster, meaner and altogether more deadly. Destroying 'C' targets will transform your Astro-Droid into an invincible attack-ship and, believe me, this is the only way you'll negotiate your way through some of the alien attack formations. Not even Luke Skywalker could weave his way safely through that lot!

Graphically ASTRO-DROID has the edge over Warhawk, but it's main drawback (for people like me) is that it's a bit of a toughie. The instructions mention bonus sections in deep space but I've never lasted the pace sufficient to encounter any. Definitely one for all those poor suffering mega-players who can't find a difficult enough Atari game to sink their teeth into.

Apart from that, it has brilliant graphics, reasonable sound effects, original music, and challenging gameplay. Red Rat have done it again. Who needs English Software anyway?? •

WHO DARES WINS II



Tynesoft
XL/XE only
Disk £9.95
Cassette £7.95
1 Player
Joystick

A GUN LAW clone from Tynesoft which follows the Commando theme popularised by many recent computer games.

Armed with an automatic rifle and 12 grenades you must embark on a desperate mission to rescue prisoners held captive in enemy garrisons. Each subsequent mission becomes a survival quest as you tackle the endless hoardes of defending troops and crack snipers.

Extra points are awarded for destroying enemy trains, jeeps, boats, staff cars and tanks, with a bonus life arriving at 10,000 points. You also gain an additional 6 grenades for each captured outpost.

The title screen is well designed and the background music – 'The Great Escape' – quite appropriate, but the game is let down in other departments. The use of colour, for instance, is nothing short of diabolical. What you get are green trees and then everything else in shades of yucky brown. It's like an explosion in a sewage factory!!

Not a bad game by any standards........ pity about those colours though! •

RIVER RALLY

Red Rat
48k cassette only £2.99
1/2 Players Joystick

A budget release from Red Rat which is primarily a 2-player race game. A winding river forms the backdrop, twisting and turning in every direction, and the players must compete for sunken treasure which must then be safely deposited in their respective banks. Staying on course is the main problem, especially when you give the boat a touch of throttle. It's like hitting the turbo-boost on a Knight Rider 'Kit' car and the boat responds instantly by careering headlong out of control. Fortunately, ramps can be used to negotiate the river banks. A handy item these!!

Various dirty tricks can be used to hinder your opponent, such as laying mines for them to crash into or stealing their money by colliding with their boat – anything goes really.

The game features a split screen view and the graphics are reasonably well done apart from the boats themselves, which are primitive PMG's without any elaborate shape or form.

Nothing earth-shattering about this one, but it's worth it's place in the budget market. •



GAU
VER
DANDY DU

Paul Blazeby finds the or



UNTLET ERSUS DUNGEONS

the original Gauntlet

Gauntlet versus Dandy Dungeons? Who, has ever heard of or seen Dandy Dungeons?

For the benefit of the unenlightened amongst you let me give you a bit of background information. As most readers probably know Gauntlet has been the smash hit of the arcades for the last year or so – the ultimate two player game! Dandy Dungeons is very similar, in fact the gameplay is almost exactly the same. HA! So it's just a rip-off of that old favourite Gauntlet, eh? Well, no. To be more precise Gauntlet is just a rip-off of that old favourite Dandy Dungeons!

Many years ago APX (Atari Program Exchange), then a division of Atari Inc., released a game by John Palevitch, who also wrote Deep Blue C. This game was Dandy Dungeons. The idea of the game was simply survive as long as possible, collecting, shooting, and using various items whilst avoiding numerous foes. Many years later Atari Coin-Op converted this almost forgotten game into the classic arcade machine Gauntlet. The rest, as they say, is history.

GAUNTLET

Many moons ago U.S. Gold announced the 'imminent' release of the arcade classic Gauntlet on various home computers. Gauntlet fans rejoiced everywhere. In somewhat 'Sinclair style' the release of the game was delayed although a few, bug-ridden, versions did reach the shops. (US Gold denied this but then withdrew the game to make some 'minor alterations'). Eventually the game was re-released and at last Gauntlet gurus everywhere could sample the real thing at home! I wasted no time in getting the game, this was one game where I felt money was no object!

I booted up my disk and waited...and waited...and waited! The game takes simply eons to load as whoever did the protection on this really went to town! My disk drive chugged, grinded, and grunted for what seemed an age with only a simple message on screen informing me that Gauntlet was loading. Eventually I was greeted with a good title page and some fine title music. I chose the wizard and the disk chugged once more. Finally a message appeared telling me to flip my disk. After completing this task I was finally greeted with the dungeon and my wizard. There I was! Me, the wizard, in my very own dungeon! Yeuugh! It was vile! The wizard was indescribably blocky and yukky whilst the dungeon was almost totally lacking in any interesting detail at all. There was nothing but the wizard on the screen so, foolishly, I advanced. Animation of the wizard was reasonably good and I decided that maybe Gauntlet wasn't as bad as my first impressions had lead me to believe. Soon I meet my first hoard of ghosts. I ran and shot at them as they jerked after me(yes, JERKED!). Regrettably the game grew worse as it went on.

You start with so much energy that you can last for so long that the game gets boring. The graphics are only average, colours are a bit off, the ghosts and other meanies jerk around the screen in 'Spectrum' fashion, whilst the player begins to wonder what the point of it all is. Most importantly the gameplay is poor. The collision registers seem a bit dodgy and movement is sluggish. Even on a two player game things get no better. Sound effects are almost non-existent. At least the title music is quite good.

I am afraid in my opinion the 8-bit Atari version of Gauntlet is a non-starter. By the way, if you insert the disk on the wrong side you are greeted with a message telling you to flip the disk and press the 'START' key. This is accompanied by a spinning animated disk which is clearly the best animation in the whole game!

DANDY DUNGEONS

So this is the game that Gauntlet was based on? When I first saw it I never gave it a fair chance. After booting up I took one look at the graphics and movement, decided that it was no good and never tried it again. Sometime later after I had heard that it was the game that Gauntlet was based on I re-booted it with renewed vigour. This time I gave the game a fair run. The graphics are blocky but colourful. The animation is poor. The sound is almost non-existent. There are no different characters, only players 1 to 4 (yes 4) which are simply static shapes of a man with a large number (1-4) on. They jerk everywhere. Believe it or not I was hooked!!

What sets Dandy Dungeons apart is the gameplay. It is almost identical to Gauntlet in the arcades which shows how closely Gauntlet was based on Dandy Dungeons. The game is simplicity in the extreme, and it works superbly. On the multiple player modes Dandy Dungeon is almost unbeatable and there is also a very big bonus – a dungeon editor! This means that the user can create new dungeons when he/she has completed the ones provided and they are incredibly easy to make. You can have an infinite number in one game by disk swapping (26 is the maximum on one disk).

To me, there is simply no competition between Gauntlet and Dandy Dungeons. Despite all the advances in graphics and sound and the 'technique' of modern Atari games, Dandy Dungeons is so far ahead in playability it is unbelievable. Gauntlet retails for about £8.95 on cassette and £12.95 on disk. Dandy Dungeons may be hard, verging on impossible to find but if you are lucky you may be able to get it at a bargain price. There are a few places selling APX games for as little as £1.50 each!

I know I have been hard on Gauntlet but I had expected so much after playing the arcade games that I felt so disappointed by the Atari version. The arcade Gauntlet is still the best for me, although I have great hopes for the ST version however I have a feeling that I may never hear those immortal words "The Wizard is going to die!" on my computer!. ●

NON STOP BASIC

Prevent your BASIC programs from being listed or stopped with this simple routine

by Chris Fox

How often have you written a BASIC program that you want to protect from accidental BREAKs or SYSTEM RESETs? Perhaps you want to prevent others from seeing the listing or simply want to make your program look more professional? Worry no more, for NON STOP BASIC will do just this for you.

The program is quite simple. It stores a machine code routine at location $100 (thus leaving Page 6 free for other programs) and simply disables the Break key and uses IOCB # to print' RUN' on the screen,' RETURN' it, and pass control back to BASIC. The SYSTEM RESET key is vectored to the program through CASINI so your own BASIC program will be run from the RESET key.

POSSIBLE PROBLEMS

There are a few problems you may run into with NON STOP. Firstly any BASIC errors will stop the program so all errors must be properly trapped. Secondly, any statement which opens the Editor (e.g. Graphics calls) normally re-enables the Break key. NON STOP handles this by using a stage 1 VBI to constantly disable the Break key but if you use your own VBI you may have problems. If you do use a Stage 1 VBI, change line 32050 to a REM and ensure that your VBI routine disables the Break key. This can be done by adding the following instructions to your routine.

```
LDA $10
AND #7F
ORA #40
STA $D20E
STA $10
```

Finally some programs 'ERROR' or crash when run a second time. If you can't identify and alleviate this problem, then I am afraid that you won't be able to use NON STOP properly.

USING NON STOP

Simplicity itself! Just type in the listing and LIST it to disk or cassette. Load, or write, your program and ENTER the NON STOP listing. Change the first line of your program to GOSUB 32000 and you are away!

Now when you write a program to keep the kids quiet, they will have to play it and not mess around with your code!

```
EI 1 REM ******************************
SI 2 REM *      NON STOP BASIC          *
LR 3 REM *            by                *
JZ 4 REM *         CHRIS FOX            *
EC 5 REM * --------------------------- *
IZ 6 REM *  PAGE 6 MAGAZINE - ENGLAND   *
EO 7 REM ******************************
NO 9 REM
TN 32000 IF PEEK(3)=1 THEN 32050
WX 32010 RESTORE 32100:MC=256:EN=341
OQ 32020 FOR X=MC TO EN:READ CODE
SM 32030 POKE X,CODE:NEXT X:POKE 3,1
GY 32040 SR=USR(ADR("▨.. ▀♥◢ ▛.h♦"))
JM 32050 VBI=USR(ADR("▩hL4├")):? "▛"
XM 32060 POKE 559,34:RESTORE :RETURN
BA 32070 REM ────────────────────────
XV 32100 DATA 162,0,142,14,210,134,16,142
   ,0,212,142,47,2,160,11,140,66,3,169
IA 32110 DATA 79,141,68,3,169,1,141,69,3,
   200,169,7,141,72,3,142,73,3,140,252,2
LV 32120 DATA 173,255,2,208,31,165,17,240
   ,27,32,86,228,169,6,160,61,162,1,76
HF 32130 DATA 92,228,165,16,10,10,56,106,
   74,141,14,210,133,16,76,95,228,76,116
UL 32140 DATA 228,29,29,82,85,78,28,28
```

YOUR AMENDMENTS REQUIRED

We are shortly starting work on a 'Best of PAGE 6' containing most of the programs and articles from the first 20 issues of PAGE 6. If you have made any improvements to the listings published in any of these issues we want to know. Your amendments, if used will be credited to you in the published book.

Please send in any amendments on disk (preferably) or cassette which will be returned to you. If you send a full program rather than amended lines only, you MUST enclosed a covering letter stating what changes you have made and what lines are involved. This is important as we cannot check through listings to identify changes. If your amendments are a few lines only, you may just type them out or write them, provided you writing is legible!

Here's your chance to share your 'improved' versions of PAGE 6 programs with others and, maybe, gain a bit of fame as well!

Send it to PAGE 6, P.O. BOX 54, STAFFORD, ST16 1DR

WHAT HAVE YOU MISSED?

BACK ISSUES

PAGE 6 back issues represent an excellent way of increasing the enjoyment of your Atari with articles to enlighten you, programs to type in and reviews of software to guide you. Almost all of the content of past issues will be as fresh and relevant today as when it appeared – increase your enjoyment now, before it's too late!

ISSUE 19 – The first coverage of the ST but, not to be outdone, plenty for the 8-bits. A great machine-language space game SECTOR 10, a super utility, Magfile, to keep track of your books and magazines plus The Chase. The second part of our series on Display Lists, build your own Speech Synthesiser, a review of 1985, in-depth Adventure reviews and plenty more.
ISSUE 20 – GRAPHICS SPECIAL. A super special issue with a graphics theme. Draw some masterpieces with GRAPHICS WORKSHOP and explore your graphics potential with Colour Palette, Picloada, Colour Attributes and CIO Slideshow. An in-depth review of Printshop and Graphics Art Department, the final part of Display Lists and the Adventure column. 11 pages devoted to the ST plus a colour feature ATARI ART and ST GALLERY. And there's more! BLOCKBREAKER is one of the best games to have been published in any magazine. Don't miss it!
ISSUE 21 – A packed issue with games, TRAIN CRAZY, Revenger and Forklift. Utilities Scalemaster, Quick Disassembler and Measuring Temperature. Programming hints with Doing The Impossible, Error 8 Solved and THE GUIDE TO ERROR CODES. Reviews of Flight Simulator II, Hitchhiker's Guide to the Galaxy, and the latest Adventures. For the ST a DEGAS to NEO converter, Lattice C reviewed and reviews of a whole host of software.
ISSUE 22 – More serious users will enjoy SMARTSHEET, a Visicalc like type-in spreadsheet, and our review of Paperclip whilst gamesters will puzzle over Tricky Cubes and try to survive Hidden Depths. The Guide to Error Codes is concluded and there are articles on Fractals, Tape Problems and some less well known Adventures. Loads of reviews and some great new routines for Blockbreaker. ST users will find out how to program Sprites and can read reviews on Time Bandit, Pro-Fortran 77, VIP Professional and more.
ISSUE 23 – Another superb machine language game Water Ski School will test your reflexes. Wordsearch will challenge those who like puzzles and other listings include Superclown and the utilities Xref and Verify. A huge review of Ultima IV heads a comprehensive review section and Going Online Part 1 will let you know if telecommunications is for you. ST owners can discover how to get a bigger screen on their colour monitor and read reviews of Zoomracks, Sierra On-Line adventures and Pro-Pascal amongst others. Also, is it worth adding a 5¼" drive to your ST?
ISSUE 24 – The biggest issue so far published! Great ST section with info about ST disks and cartridges and loads of reviews. For 8-bit users there is MUNCHY MADNESS, the best game we have ever published plus a super cheque book utility AUTOCHECK. Plus all about checking your disk drive, another game, more utilities, reviews of RAMBIT, Adventure games and lots more. Too much in this issue to list fully!
ISSUE 25 – Another biggie! A must for 1029 printer owners with 3 great utilities including a screen dump. A super Japanese chess game called SHOGI, a type in REVISION C BASIC, a full feature on disks and more. For ST, type in OTHELLO, reviews of LEADER BOARD and MEAN 18, Hints and Tips and several other reviews and articles.
ISSUE 26 – SOLID MODELLING is one of the best programs we have published. Be creative! Other programs include SOURCE WRITER for machine code programmers, FLEXIBLE FINGERS to help you type, NUTS and more. Reviews of TRIVIAL PURSUIT, DVC/65, SPEEDSCRIPT and much, much more. ST users can learn all about HARD DISKS, FAST BASIC, TYPESETTER ELITE, DEGAS ELITE and read reviews on a whole lot more software.
ISSUE 27 – Some cracking listings for the 8-bit. In GREAT BRITAIN LTD. you can be the Chancellor and help run the country. COMPUTER GAMMON is a great Atari version of backgammon and there's ANTS IN YOUR PANTS, DISK COMMAND and others. There is a feature on word processing and stacks of reviews. The ST section includes an in-depth review of ART DIRECTOR and a neat little program to put scrolling stars on your screen! Lots of reviews including HABAVIEW, K-SPREAD 2, K-WORD and many more.

All back issues are £1.20 each in the U.K., £1.95 for Europe or surface mail elsewhere and £2.75 for Air Mail outside Europe. Please make cheques/postal orders payable to PAGE 6. Send your order to PAGE 6, P.O. BOX 54, STAFFORD, ST16 1DR, ENGLAND.

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ON DISK

All of the most recent issues of PAGE 6 are available on disk – including those out of print issues!

A PAGE 6 Issue disk contains all of the programs (except ST) from a particular issue, ready to run from a custom Menu. No more frustrating hours typing all those long programs. See just how good they are without the effort.

ISSUE 14 – Contains COUNTERACTION, SUPPLY BLASTER, CROSSWORD CREATOR. DEPTH CHARGE, ACCESS III, RAINBOW START, BASIC ANIMATION and TYPO II.
ISSUE 15 – Contains THE WANDERER, KANGA, TICK TOCK, AUTOCAR, THE BOOSTER and PLAYER MISSILE GRAPHICS
ISSUE 16 – Contains BLACK BOX, FREEWAY ACE!, DRAUGHTS, TURN THE TABLES, AUTOCAR GRAPH and CHARACTER PLOTTING programs.
ISSUE 17 – Contains RENUM, SHOOTING GALLERY, X-Y-ZAP, INLAY CARDS, CASTLE MORGUE, MATTHEWS LABEL MAKER and several programs on ANTIC modes 4/5.
ISSUE 18 – Contains BERTIE, GRAND PRIX II, BLITZ, LISTER, STARS, TYPO 3 and several programs on Display Lists.
ISSUE 19 – Contains SNOWFALL, THE CHASE, MAGFILE, SECTOR 10, STARKIES UTILITIES plus programs for the Speech Synthesiser and several programs on Display Lists.
ISSUE 20 – Contains BLOCKBREAKER, GRAPHICS WORKSHOP, COLOUR PALETTE, PICLOADA, COLOUR ATTRIBUTES, CIO SLIDE SHOW plus more Display List programs and pictures for Graphics Workshop.
ISSUE 21 – Contains REVENGER, TRAIN CRAZY, FORKLIFT, SCALEMASTER, DOING THE IMPOSSIBLE, QUICK DISASSEMBLER and MEASURING TEMPERATURE.
ISSUE 22 – Contains SMARTSHEET, TRICKY CUBES (two versions), HIDDEN DEPTHS and new versions of BLOCKBREAKER. DOUBLE SIDED DISK.
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ISSUE 24 – Contains the complex check balancing program AUTOCHECK and MUNCHY MADNESS, the best game we have ever published!. Plus another game FLYING HIGH and two superb utilities, SPEED CHECK and MENU. A very full disk and not to be missed.
ISSUE 25 – Contains the chess program SHOGI, a page flipping demo, BOUNCING BERT, and three 1029 printer utilities, LIST 1029, SCREEN DUMP and SMALL FONT. A must for all 1029 owners.
ISSUE 26 – TWO virtually full sides with bonus screens for SOLID MODELLING! Check them out. Also SOURCE WRITER for machine code programmers, FLEXIBLE FINGERS to help you type, a game of NUTS, DESIGNER LABELS for EPSON printers and YOUR OWN CURSOR plus any others in this issue.
ISSUE 27 – Long listings include GREAT BRITAIN LTD. and COMPUTER GAMMON, two excellent programs. DISK COMMAND adds new commands to BASIC and TIMESCREEN will give you a new screen with a clock for typing in those programs. Plus all the other bits and pieces on a full disk.

PAGE 6 Issue disks will run on any 8-bit Atari with 48k or 64k memory. Each disk is just £3.95. Compare that for value!

Order your disks from PAGE 6 by post from PAGE 6, P.O.BOX 54, STAFFORD. ST16 1DR or by telephone using ACCESS or VISA on 0785 213928.

Postage is FREE in U.K. Overseas please add £1 per order (for any number of disks).

LOTS MORE!

Subscribers to PAGE 6 gets lots more special offers. Books, an incredible collection of Public Domain software for 8-bit and ST machines, exclusive software, binders and more. To find out what you are missing ask for a copy of our PAGE 6 ACCESSORY SHOP LEAFLET.

THE RESOURCE FILE

The Resource File is a new service provided by PAGE 6 to help Atari owners (both 8-bit and ST) find sources of information, help and supply. An entry in this feature does not necessarily imply any endorsement by PAGE 6 and readers are advised to check for themselves to ensure that the information is still current. We would ask any readers who find information to be inaccurate or out of date to let us know so that an entry may be amended or deleted.

RETAILERS

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The only criterion for an entry in this column is that the retailer must stock PAGE 6. That is the only measure we have that a retailer is genuinely interested in supporting Atari. Phone us on 0785 213928 if you wish to be included.

BBS

Name: Gamlingay FIDO
Number: 0767 50511
Hours: 24 hours
Baud: 300 – 2400
Features: Atari SIG and program library

Do you run a Bulletin Board which caters mainly for Atari 8-bit or ST? For an entry in this feature please send us details as above (5 words max on Features!) on a plain sheet of paper headed **RESOURCE FILE – BBS**.

Any background information included will be filed for reference but not published.

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Name: CROMWELL ATARI USER GROUP
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Name: LONDON ATARI CLUB
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Contact: Colin Hunt
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Members: Mail only(?). Worldwide.

Do you want others to know about your group? Send details as above ONLY (5 words max. on Members!) on a plain sheet of paper headed **RESOURCE FILE – USER GROUPS**.

That's all you get! We will not publish any other details as meeting times and places tend to change. Appoint someone responsible to handle any enquiries received.

IT'S UP TO YOU!

If you feel that your organisation should have an entry in this feature, write to us. Whilst we do have details of many other User Groups and Bulletin Boards we have not included these as we do not know if the details are correct.

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